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THE
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OF THE
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THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

VOL. IX.

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TO READERS AND CORRESPONDENTS.

Communications have been received from Drs. HEUSTIS, WILLIAMS, BROOKS, and MOORE.

In compliance with the request of the Prize Essay Committee of the Medico-Chirurgical Faculty of Maryland, we inserted in our last No. the Prize Essay of Dr. CALDWELL; we are happy again to meet their wishes by stating, that there was an introduction and an appendix to the essay, neither of which appear in the Journal.

We have received the following works:—

Traité Complet de Physiologie de l'Homme. Par FRED. TIEDEMANN, Professeur de Physiologie à l'University de Heidelberg. Traduit de l'Allemand. Par A. J. L. JOURDAN, D. M. P. Part I. and II. J. B. Baillière, Paris, 1831. (From the publisher.)

Physiologie Médicale et Philosophique. Par ALM. LEPELLETIER, de la Sarthe. Tom. I. Germer Baillière, Paris, 1831. (From the publisher.)

Address delivered before the Medical Society of the city and county of New York, on the 25th day of July, 1831. By DANIEL L. M. PEIXOTTO, M. D. President. New York, 1831. (From the author.)

Remarks on the History and Treatment of Delirium Tremens. By JOHN WANE, M. D. Member of the Massachusetts Medical Society. (From the author.)

Medico-Chirurgical Transactions. Vol. XVI. Part II. (From the Society.)

Descriptio Ichthyosis Cornææ Congenitæ in Virgine Observatæ, tabulis tribus lapidi incisus illustrata. Auctor CHR. HELV. SCHMIDT, M. D. (From Dr. VON DEM BUSCH.)

We are also indebted to our valued correspondent, Dr. Von dem Busch, of Bremen, for the following Inaugural Dissertations.

De Secali Cornuto ejusque vi in Corpus Humanum salubri et inimica. Auctor C. S. HAESE.

Quædam de Præcipuis Morbis qui post operationem cataractæ oriri possunt. Auctor G. A. CLOSSET.

De Morborum Psychicorum Curatione Generaliora Quædam. Auctor F. A. MEYER.

De Angina Membranacea. Auctor G. ZICKNER.

De Sana et Morbosa Pinguedinis in corpore secretione. Auctor G. C. GRUNE.

De Ovariorum Degeneratione. Auctor H. J. G. BECK.

Chemical Manipulation, being Instructions to Students in Chemistry, on the Methods of performing experiments of Demonstration or of Research, with accuracy and success. By MICHAEL FARADAY, F. R. S., M. R. I. &c. &c. First American, from the last London edition, edited by J. K. MITCHELL, M. D.

Lecturer on Medical Chemistry in the Philadelphia Medical Institute. Philadelphia, Carey & Lea, 1831. (From the publishers.)

Essays on some of the most important articles of the *Materia Medica*, &c. &c. By G. W. CARPENTER. Philadelphia, 1831. (From the author.)

On Baths and Mineral Waters. In two parts. Part I. A full account of the Hygienic and Curative Powers of cold, tepid, hot, and vapour baths, and sea bathing. Part II. A History of the Chemical Composition and Medicinal Properties of the chief Mineral Springs of the United States and Europe. By JOHN BELL, Lecturer on the Institutes of Medicine and Medical Jurisprudence, Member of the Medical and Kappa Lambda Societies, and Fellow of the College of Physicians, Philadelphia, and of the Georgofili Society of Florence, &c. Philadelphia, 1831. (From the author.)

Annales de la Médecine Physiologique, February, March, April, May, 1831. (In exchange.)

Archives Générales de Médecine, April, May, June, July, 1831. (In exchange.)

Revue Médicale, April, May, June, July, 1831. (In exchange.)

Journal Universel et Hebdomadaire, April, May, June, July, August, 1831. (In exchange.)

Gazette Médicale, April, May, June, July, August, 1831. (In exchange.)

Journal de Chimie Médicale, March, April, May, June, July, August, 1831. (In exchange.)

Bulletin des Sciences Medicales, January, 1831. (In exchange.)

Transactions Médicales, May, June, July, 1831. (In exchange.)

Journal der Chirurgie und Augen-Heilkunde. Herausgegeben Von C. F. V. GRAEFE and Ph. V. WALTHER. Band XIV. Heft 3. (In exchange.)

The London Medical Gazette, May, June, July, August, 1831. (In exchange.)

The London Medical and Physical Journal, June, July, August, 1831. (In exchange.)

London Medical and Surgical Journal, May, June, July, 1831. (In exchange.)

The Glasgow Medical Journal, May, 1831. (In exchange.)

The Midland Medical and Surgical Reporter, May, 1831. (In exchange.)

The Medico-Chirurgical Review, July, 1831. (In exchange.)

The Edinburgh Medical and Surgical Journal, July, 1831. (In exchange.)

The North of England Medical and Surgical Journal, June, 1831. (In exchange.)

The Western Journal of the Medical and Physical Sciences, July 1831. (In exchange.)

The Transylvania Journal of Medicine and the Associate Sciences, July, October, 1831.

New York Medico-Chirurgical Bulletin, edited by GEORGE BUSCH, M. D. May, June, July, August, September, 1831. (In exchange.)

The New York Medical Journal, August, 1831. (In exchange.)

For the gratification of our contributors we present references to the works received during the last three months, in which their communications are noticed.

Professor MOTT will find his case of Axillary Aneurism noticed in the London Medical and Physical Journal, for June, and the London Medical and Surgical Journal, for June, 1831; and his case of Aneurism of the Arteria Innominata, in the Glasgow Medical Journal, for May, 1831.

Professor GIBSON's case of Axillary Aneurism, is noticed in the Glasgow Medical Journal, for May, 1831.

Professor HENDERSON's cases of Phthisis are copied into the Boston Medical and Surgical Journal, for October 4th, and into the New York Medical Journal, for August, 1831.

Professor PARSON's Memoir on Animal and Vegetable Malaria, is noticed in the Lancet, for June, 1831.

Dr. BARTON's case of Longitudinal Section of the Lower Jaw, is noticed in the New York Medical and Chirurgical Bulletin, for July, 1831.

Dr. WRIGHT's Case of Tubero-Carunculoid Liver, is copied into the London Medical and Surgical Journal, for June, 1831.

Dr. RANFOLPH's Memoir on Morbus Coxarius, is noticed in the London Medical and Surgical Journal, for June, 1831.

Professor GEDDINGS' Essay on the Use of Strychnine in Paralysis, is noticed in the London Medical and Surgical Journal, for May, 1831.

Dr. MITCHELL's New Practice in Rheumatism, is noticed in the Transylvania Journal, No. XIV. and in the New York Medico-Chirurgical Bulletin; his experiments on Endosmose and Exosmose, are copied into the Journal of the Royal Institution, No. IV. and V. and are noticed in the Edinburgh Medical and Surgical Journal, for July; his case of Gonorrhœa, caused by the Lochial Discharge, is noticed in the London Medical and Physical Journal, for June.

Dr. FARNESTOCK's Observations on the Utility of the Compound Tincture of Benzoin in Burns, are noticed in the Revue Médicale, for May, 1831.

Dr. FAUST's Experiments on Endosmose and Exosmose, are noticed in the Edinburgh Medical and Surgical Journal, for July, and in the Journal de Chimie Médicale, for March, 1831.

Dr. BELLINGER's Remarks on the Use of Ergot in Menorrhagia, are copied into the London Medical and Surgical Journal, for May, 1831.

Dr. HOWE's Operation for Hair Lip, is noticed in the Western Journal of the Medical and Physical Sciences, for July, 1831.

Dr. CALLAGHAN's Account of Scarlatina Anginosa, is noticed in the New York Medico-Chirurgical Bulletin, for June, 1831.

Dr. YOUNG's Remarks on Cancrum Oris, are noticed in the New York Medico-Chirurgical Bulletin, for June, 1831.

Dr. RUAN's Case of Elephantiasis of the Scrotum, is noticed in the Revue Médicale, for May, 1831.

Dr. HORT's Case of Poisoning with Corrosive Sublimate, is noticed in the *Revue Médicale* for May, and in the *Archives Générales*, for April, 1831.

Dr. VAUGHAN's Cases are noticed in the *Transylvania Journal*, No. XIV., and in the *New York Medico-Chirurgical Bulletin*, for June, 1831.

Dr. RIVINUS's Memoir on the Operation of Physical Causes in Man, is noticed in the *London Medical and Surgical Journal*, for June, 1831.

Mr. CARPENTER's Account of Maracaibo Bark, is noticed in the *London Medical and Surgical Journal*, for June, 1831.

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY & LEA, Philadelphia, for the Editor of the American Journal of the Medical Sciences," or may be deposited with Professor J. C. WARREN, M. D. Boston—C. DRAKE, M. D. New York, or Professor S. H. DICKSON, M. D. Charleston, S. C.

All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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- of Medicine, of the Royal Medical Society of Madrid, of the Patriotic Society of Cordova, Corresponding Member of the Society of Emulation of Liege, of the Medical Societies of Philadelphia, New Orleans, and Louvain, &c. &c. Translated from the French of the Fourth Edition, by Isaac Hays, M. D. and R. Eglesfeld Griffith, M. D. Members of the American Philosophical Society, of the Academy of Natural Sciences, Honorary Members of the Philadelphia Medical Society, &c. &c. Philadelphia, Carey & Lea, 8vo. Vol. I. pp. 497; Vol. II. pp. 404 - - - 135
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THE
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MEDICAL SCIENCES.

ART. I. *Medical Statistics; consisting of estimates relating to the Population of Philadelphia, and its changes as influenced by the Deaths and Births, during a period of ten years, viz. from 1821 to 1830 inclusive.* By G. EMERSON, M. D.

SINCE the publication of the views in relation to the medical statistics of Philadelphia, presented in a former volume of this work, a new census has been taken and other data offered, which admit of an extension of the investigations to a further period—the commencement of the last year. The results developed by a continuation of the calculations, are of a highly interesting nature. Among them the most striking are, the increased rate of mortality within the last ten years, from epidemic causes that have but recently subsided, and the correct ratio of deaths for the coloured population, which, for reasons previously explained, was necessarily founded in some measure upon assumed data. Added to the time contained in former estimates, our calculations now embrace a connected series of twenty-four years, namely, from the year 1807 to 1830 inclusive.

Population.

As a proper prelude to our inquiries, we present an abstract from the recent census, so as to show the number and description of inhabitants included within the built parts of the town, and from which the returns of interments are made. For the information of those unacquainted with the municipal divisions of Philadelphia, it may be useful to observe that the city proper, or that portion under the controul of the mayor and councils, embraces but about one-half of the population of the whole town—the limits of the original incorporation

having been overrun in various directions. The parts subsequently built, instead of being united to the original incorporation, are formed into several distinct districts, each invested with corporate privileges.

An act of the state legislature, however, extends the provisions of the Health Law over the whole, so that the districts, as well as the city, have their representatives in the Board of Health. Those who attempt calculations of the comparative mortality of Philadelphia, without a precise knowledge of the districts which make returns of their interments to the Health Office, must necessarily be led into erroneous conclusions. For should the sum of the annual mortality be compared with a less amount of population than the returns of interments are made from, the ratio of deaths must appear greater than it actually is, and vice versa, should the contrary circumstances prevail. Gross errors, from such causes, for the most part, have already been committed by persons at a distance, and circulated very extensively both in this country and in Europe. Some of the publications alluded to have represented the mortality of Philadelphia as exceeding that of the other principal cities in the United States, whereas it has been shown to present as low, if not a lower rate than any one of them; we mean under ordinary circumstances, and in the absence of those epidemic visitations to which all places are subject.

Reckoning the whole population for the city and county, without reference to distinction of colour, the total amount is 188,961, of which number 90,332 are males, and 98,620 females. Adopting the distinction, the whites amount to 173,345, the blacks to 15,616. The increase of the entire population within the city and county conjointly, since the year 1820, is 51,864, being in the ratio of 37.8 per cent. for the whole period, or an average of $3\frac{1}{4}$ per cent. per annum.* The white increase estimated separately amounts to 49,599, or 40 per cent. for the ten years, being at the rate of about $3\frac{1}{2}$ per cent. per annum. The increase of blacks alone for the ten years is 3732, being at the rate of about $31\frac{1}{2}$ per cent. or $2\frac{3}{4}$ per cent. per annum.†

But it is that portion of our population embraced within the limits of the bills of mortality, which interests us most particularly. This alone is exhibited in our abstract, or table marked A. and amounts

* This ratio, it must be observed, is computed upon geometrical principles, as approaching nearest to the rate at which population ordinarily increases, and not upon the arithmetical usually resorted to.

† Much interesting information relative to the changes and *denseness* of population in the city and county of Philadelphia, may be found in Hazzard's *Pennsylvania Register*, Vol. 8.

without distinction of colour, to 167,811. Compared with the population existing in 1820, we find an increase of 40.6 per cent. within the last ten years.

The *white* population considered separately, shows an increase greater than the general ratio just mentioned. The total amount is 153,169, and the increase during the ten years is 41.6 per cent. Estimating the sexes separately, there are 73,547 males, and 79,622 females, so that the last exceed the first in the ratio of $8\frac{1}{4}$ per cent. or in other words, there are about 100 females to 92 males.

We find the ages of each of the sexes distributed into thirteen periods, commencing with those of and under the 5th year, then giving the number between the 5th and 10th, the 10th and 15th, the 15th and 20th, the 20th and 30th years, and so on to the most protracted periods of life. On comparing this division with that adopted when the former enumerations were made, it will be found to differ very materially, more than double the number of periods being given.

With the whites, the number of both sexes at different ages, compared with the total amount at all ages, stands thus:—All those Of and under 5 years, constitute 14.6 per ct. of the whole population.

Do.	10	“	26.9	do.
Do.	15	“	37.6	do.
Do.	20	“	50.3	do.
Of and over	30	“	28.1	do.
Do.	40	“	14.6	do.
Do.	50	“	8.	do.
Do.	60	“	3.2	do.
Do.	70	“	1.08	do.
Do.	80	“	0.28	do.
Do.	90	“	about 4.5 per 10,000.	
Do.	100	“	about 6.5 per 100,000.	

In the period first marked, namely, that including all of and under the 5th year, the males exceed the females about 5 per cent.* but in that which includes those between the 5th and 10th years, the male excess has diminished so as to be only about 1 per cent.

In the next five years, namely, between the 10th and 15th years, the females exceed the males about 8 per cent. and from this last named period to the 50th year, the excess continues pretty steadily in the ratio of from 8 to 10 per cent. Afterwards, however, it increases greatly, so that

* An examination of the table of births will show that the number of males at birth exceeds that of the females more than 7 per cent.

Between the 50th and 60th yr's, the females exceed the males 34 per ct.

"	60th and 70th	"	"	"	59	"
"	70th and 80th	"	"	"	90	"
"	80th and 90th	"	"	"	79	"
"	90th and 100th	"	"	"	40	"

Of those who had attained and exceeded a century, seven were females and three males.

The *Blacks* constitute about 8.7 per cent. of the whole population within the limits embraced by the bills of mortality. They have increased within the last ten years 28 per cent. or in a ratio of about 2.7 per cent. per annum—a much lower rate than that of the whites.

The whole amount included in our abstract is 14,642, of which 6307 are males, and 8335 females. The disparity between the sexes is therefore far greater than we find in the white population, the excess of females amounting to 32 per cent. or nearly a third. This is partly owing to the circumstance of the services of females being in more general demand in cities than in the country, and partly to the greater mortality of the males. The distribution into periods differs from that adopted for the whites, only six being given, instead of thirteen. The first designated is the 10th year, and the females of and under that age, exceed the males about 5 per cent. In that

Between the 10th and 24th years, the female excess is about 61 per ct.

"	24th and 36th	"	"	"	36	"
"	36th and 55th	"	"	"	16	"
"	55th and 100th	"	"	"	38	"

With the black population, the number of both sexes at different periods of life, compared with the total amount at all ages, stands thus:—

All under 10 years, constitute 21.7 per cent.

" 24 " " 50.6 "

All over 36 " " 22.1 "

" 55 " " 5.9 "

" 100 " " 1.7 or nearly 2 per 1000.

Of those that had attained 100 years and over, 14 were males and 12 females. It is curious to observe, that notwithstanding their small numbers when compared with the whites, they greatly exceed the latter in the proportion of their centenarians, and that with the blacks the number of male centenarians exceeds that of the female. From the difficulty which frequently occurs of ascertaining the ages of blacks with certainty, it is possible that more of them are reported among the instances of extreme longevity, than are entitled to the distinction.

Births.

In our former publication we were only enabled to present an account of the births for six years. We can now extend the period so as to embrace ten years, namely, from 1821 to 1830 inclusive. As the accuracy of the data upon which our calculations are founded, depends for the most part upon the character of those by whom the returns are made, that is to say, the accoucheurs, we think it proper to premise that the obstetric practice of Philadelphia is mostly in the hands of the physicians. In the last year, for instance, the register at the Health Office contained the names of one hundred and fifty-five practitioners of midwifery for the city and suburbs, of which number only twenty-one were females, the remaining one hundred and thirty-four being regular physicians. of whom some possess a very limited portion of practice, whilst others have a very great monopoly. Of the total number of births for the year mentioned, viz. 7628, the amount delivered by the female accoucheurs was 1061—leaving the balance of 6567 to be divided among the male practitioners. It thus appears that most of the returns of births are made in Philadelphia, by those whose standing for probity and intelligence should entitle their statements to credit. Whether all the births which take place are reported, is, we think, somewhat doubtful, though the number omitted may not be very large. The average proportion compared to the population, is about 4.42 per cent. per annum.

Upon running the eye along the columns of table B. we are struck with the variations appearing from year to year, not only in the totals, but in the respective proportions of the sexes. There is also a considerable deficiency conspicuous in the total for the year 1829, which induced us to suppose that a mistake had been somewhere committed, but upon the most careful examination of the original record, we found the returns complete from all the various practitioners, and were unable to perceive any error in the computation. It is a fact of the highest interest, that although the males at birth for the whole period exceed the females by more than 7 per cent. such is the greater ratio of mortality among them during the first years of life, that at the fifth year the excess of males is only about 5 per cent. whilst by the tenth year it has been so reduced that the excess is only about 1 per cent. Referring to the table exhibiting the population at different ages for the evidences of our representations, we shall not stop to indulge in the speculations which this subject seems to invite.

In consequence of some curious investigations made lately by M.

VILLERME, of Paris,* we have been induced to construct a table of the births in Philadelphia for the last ten years, so as to present the amount of each sex per month, (Table C.) This was a very arduous and troublesome task, as from the manner in which the record is kept, we were obliged to refer to the separate statements made by the various practitioners in the respective years embraced by our table.† Having obtained the amount of the births for each of the months in the period mentioned, and calculated their sums, it was next necessary, in order to institute a fair comparison, to equalize them, by making all of the value of thirty-one days. In effecting this, we followed the rule given by M. Villermé, which consists in ascertaining for each of the short months the average number of births per day, and multiplying this sum by thirty-one. By pursuing this process, the following results were obtained, which we arrange in such manner as to give the highest place to the months presenting the greatest number of births, and the corresponding months of conception, which last are seen on the right.

Month.	Whole No. of Births.	Males.	Females.	Correspond. mos. of Conception.
1. February	- 5996	- 3099	- 2897	- May.
2. September	- 5965	- 3112	- 2853	- December.
3. December	- 5937	- 3023	- 2914	- March.
4. January	- 5712	- 3012	- 2700	- April.
5. November	- 5652	- 2954	- 2698	- February.
6. March	- 5598	- 2896	- 2702	- June.
7. October	- 5567	- 2941	- 2626	- January.
8. August	- 5437	- 2798	- 2639	- November.
9. July	- 5221	- 2764	- 2457	- October.
10. June	- 4855	- 2523	- 2332	- September.
11. April	- 4805	- 2515	- 2290	- July.
12. May	- 4797	- 2503	- 2294	- August.

It would hence appear that the locality of Philadelphia is subjected to the influence of some causes, which, during a portion of the year, operate unfavourably upon the increase of its population by reproduction. These causes seem to prevail during the extreme heat of summer, and in the commencement of autumn, the months of August,

* De la distribution par mois des Conceptions et des naissances de l'homme. Annales d'Hygiène Publique et de Médecine Légale.

† The sums of births per annum exhibited in this table, will sometimes be found less than those reported annually by the Board of Health. This arises from the rejection of some returns made by the quarter or year, instead of the month.

July, and September, standing lowest in the scale designating the months of conception.

As we are unacquainted with any circumstances connected with the social customs or institutions of the place, sufficient to account for the variation so obvious at different seasons in the births and conceptions, we feel ourselves constrained to adopt the explanation proposed by M. Villermé, who attributes it to the influence, either direct or indirect, of the annual revolution of the earth around the sun, or in other words, to the order of the seasons. It will no doubt be gratifying to the investigator of this novel subject, to have the main conclusion which he has derived from his extensive researches in Europe, confirmed by calculations made in this part of the globe. From an inspection of our statement, it will be seen that its results are in singular accordance with the observation of M. Villermé, "*c'est à dire, que les mois de Juillet, Août et Septembre, qui sont les plus chauds, offrent comparée aux autres mois de l'année, une diminution notable dans la force génératrice.*" But although the results of our observations correspond thus strictly with his in regard to the *minimum* of births and conceptions, they are found to vary in respect to the *maximum*, as will be seen by comparing our statement with that one of his general conclusions, which asserts that "*toujours et partout, à des variations près fort limitées, la fin du printemps, le commencement de l'été, offrent les plus grand nombre des conceptions.*" &c. As, however, the thermometrical observations made in this locality,* will exhibit a striking difference between the climate and seasons of this part of America, and those of the various parts of the European continent comprehended in M. Villermé's calculations, some difference in the results was to be naturally expected. Should similar investigations be made in other sections of our own country, which from its extent presents such diversity of climate, they will no doubt exhibit corresponding variations in the results, but still, we think, support M. Villermé's leading principle, relative to solar influence upon the propagation of the human species.

Before we conclude our remarks upon this subject, we would invite attention to a fact which perhaps will go further to account for the variations in the number of births existing between the different months, than any other circumstance, independent of temperature.

An estimate made so as to include those three years of the series least affected by the epidemic causes we have adverted to, would present a different order in the months, from one made to include a like number of years most subject to these influences. Let us take for exam-

* See Vol. I. of this Journal, art. Medical Statistics of Philadelphia, Table I.

ple the three last years of our series, viz. 1828, 1829, and 1830—during which the epidemic has been felt much more slightly than during the seven preceding years. Their order when arranged according to the plan previously adopted, would differ but little from that presented by the whole series, and would stand as follows, reckoning all the months to have thirty-one days:—

Month.		No. of Births.		Corresponding months of Conception.
1. September	- -	2047	- -	December.
2. February	- -	1995	- -	May.
3. December	- -	1951	- -	March.
4. January	- -	1947	- -	April.
5. March	- -	1913	- -	June.
6. November	- -	1885	- -	February.
7. October	- -	1836	- -	January.
8. August	- -	1785	- -	November.
9. July	- -	1719	- -	October.
10. April	- -	1664	- -	July.
11. May	- -	1658	- -	August.
12. June	- -	1610	- -	September.

When, however, we make a similar estimate for the three years, which, from their great mortality, we may suppose felt the epidemic influences in the highest degree, viz. 1823, 1824, and 1825, we find some variation, the months arranged according to the decreasing ratio of births and conceptions taking the following order:—

Month.		No. of Births.		Corresponding months of Conception.
1. September	- -	1685	- -	December.
2. December	- -	1674	- -	March.
3. October	- -	1645	- -	January.
4. February	- -	1629	- -	May.
5. January	- -	1581	- -	April.
6. August	- -	1569	- -	November.
7. November	- -	1540	- -	February.
8. July	- -	1497	- -	October.
9. March	- -	1487	- -	June.
10. April	- -	1416	- -	July.
11. June	- -	1372	- -	September.
12. May	- -	1317	- -	August.

In this last estimate we see but little change in the situation of the months presenting the extremes, or *maximum* and *minimum* of births and conceptions. We find, however, a sensible diminution in the proportion of conceptions for the months of June and October.

Now in the first of these months we know that the epidemic forms of disease seemed to revive for the season with great force, and continue until October. We therefore think it a demonstrable fact, that in addition to the principal influence which lessens fecundity in this locality, namely, that of high temperature, there has existed during the period embraced by our calculation, another retarding force connected with the late epidemic.

As the results of our observations are in accordance with those obtained by M. Villermé from extensive data procured in those parts of France subject to endemic influences, we do not think it necessary to pursue these calculations further.

We terminate this portion of our investigations with the following general conclusions:—

1. That the chief cause which operates in our locality in retarding the natural increase of the population, appears to be the extreme heat of summer and the insalubrity of the first months of autumn.

2. That another cause which has tended to check fecundity during the last ten years, may be traced to the epidemic influences to which the population of the environs of the town were subjected. This of course is not a regular, but merely an occasional cause.

3. That the prevalence of epidemics or extensive sickness among adults, tends not only to diminish population directly, by increasing mortality, but indirectly, by diminishing fecundity.

4. That upon examination of the births and deaths of particular years, the *maximum* of conceptions will almost invariably be found corresponding to the *minimum* of adult mortality, and vice versa, the *maximum* of deaths agreeing with the *minimum* of conceptions.

According to M. Villermé's investigations, the disparity existing between the births and conceptions of the different seasons is much more strongly marked in the country and small towns than in the large cities. We possess no data by which we can ascertain whether this observation is equally applicable to this country.

Deaths.

The proportion of deaths to the population for the last ten years is exhibited in table D. and proves greater than it has been at any period since regular records of mortality have been kept. The lowest rate was in the last year, (1830,) when it was one death in 42.94 inhabitants, or 2.32 per cent. of the population. The highest degree of mortality occurred in 1823, and was at the rate of one death in 30.5 inhabitants, or 3.26 per cent. of the population. The average of the whole period is one death in 38.85 inhabitants. These estimates are

made without reference to distinction of colour, and exclusive of still-born.

This ratio so far exceeds that of the fourteen preceding years, when it was one year as low as one death in 56.53 inhabitants, and on an average for the whole period, one in 47.86 of the population generally, and only one in about 51 of the whites, that we feel called upon to enter into some investigation of its causes.

Upon referring to the tables accompanying these and our former calculations, exhibiting the annual mortality, it will be seen that in the year 1818 a very sudden increase took place in the amount of deaths. An examination of the tables giving the particular diseases from which these occurred, shows that this increase may be traced for the most part to an unusual prevalence of fevers, inflammations, and bowel complaints, or in other words, to epidemic causes, which were felt with greatest violence from 1818 to 1826, and more especially in the years 1822, 1823, and 1824.* It is a curious fact, that although the same influences which promoted fevers seemed to operate in producing an increase of bowel complaints, the mortality from this last source should not have diminished in a proportion similar to that of fevers, whilst with regard to inflammations there has been a striking increase with the subsidence of fevers. It is possible that the new nomenclature of the physiological school of medicine may have occasioned some of these last to be enumerated with the phlegmasiæ, but the number we are sure must have been

* To make this more apparent, we subjoin the following abstract from the tables. The first years are added for the purpose of showing the ordinary mortality previously to the commencement of the epidemic.

Year.	Total mortality.	Fevers.	Inflammations.	Bowel compl'ts.	Consumption.	Dropsies.
1816	2225	193	229	153	434	156
1817	2107	211	205	229	349	149
1818	2609	492	195	283	396	171
1819	2979	277	265	363	459	231
1820	3189	526	275	454	446	209
1821	2161	402	289	380	438	194
1822	3334	498	284	461	488	243
1823	4372	744	339	562	536	241
1824	4284	647	402	297	576	221
1825	3539	362	338	362	519	270
1826	3845	421	447	415	587	242
1827	3659	365	481	384	523	219
1828	3971	373	483	429	581	253
1829	4001	260	631	394	638	287
1830	3948	228	505	361	636	281

very limited, as may be seen by referring to the particular kinds of inflammation.

In a former number of this journal we took some pains to show that the influence of the sickly air was expended upon that comparatively limited portion of the population living in the environs and outskirts of the town. With these, fever in some of its forms was almost universal, whilst in the more dense and well paved parts, the air seemed unusually healthy, and where remittents and intermittents were met with, they could almost invariably be traced to exposure to night air in the country or suburbs. Never was a stronger demonstration afforded of the resistance made by cities to the influence of country malaria than our late experience has furnished. Great as was the amount of sickness, it was confined almost entirely to the comparatively small proportion of population inhabiting the unpaved or ill-paved environs. Our observation on this and other occasions, has led us to ascribe this exemption for the most part to the pavements, which, by effecting a perfect draining, prevents exhalation, at the same time that it admits of the total removal of vegetable and animal matters, the sources of foul and unhealthy emanations. The chief motive for paving the streets and side walks, is usually convenience, but it has always appeared to us, that by far the most important object achieved by it was the preservation of health.

Whilst upon the subject of public hygiene, we cannot restrain ourselves from noticing another consideration connected with it, namely, ventilation, or a proper supply of pure unrespired air. By far the greatest proportion of the annual sickness and mortality of ordinary seasons is furnished by the narrow and confined alleys and courts existing in various parts of the town. The low terms upon which the small houses and rooms in such places can be obtained, causes them to be literally crowded with a class of population for the most part negligent of cleanliness, and it can occasion no surprize that there should be a great disparity between the proportions of sickness and mortality among these, compared with that which takes place in the portion living in larger dwellings, having a freer circulation of air. The difference just mentioned, though sufficiently obvious in adults, is most lamentably conspicuous among children. Notwithstanding the great numbers of these which die annually of cholera, we feel ourselves warranted in asserting that deaths from this disease are rare in houses with large and well-aired apartments. To one who in the capacity of physician to a dispensary or other charity, has been engaged in the arduous duties of attending the poor in their uncomfortable abodes, evidences of our assertions must be abundantly familiar.

The numerous instances wherein the mercenary calculations of individuals has tempted them to put up nests of contracted tenements in courts or alleys admitting but little air, and yet subjected to the full influence of heat, has often induced us to wish that there could be some public regulation by which the evil might be checked. Mankind have inhabited cities long enough to know from severe experience, that there are certain limits to the denseness of population, which when passed, always lead to disease and mortality. As we think every thing tending to the preservation of public health must be a fit subject for legislation, we do not see why a law should not be procured by which the undue crowding of population might be prevented, and the number and size of dwellings adjusted to superficial limits. There are at present municipal regulations intended as a protection against conflagration, by designating the materials of which houses shall be constructed; and if such precautions be deemed so important when property is the consideration, of how much more consequence would be those for the preservation of health and life.

It is common to attribute the greater mortality known to take place under ordinary circumstances in large towns among the poorer classes, chiefly to meagre or unwholesome food and immoderate indulgence in strong liquors. But in this country, where for a part of the year we are subjected to a degree of heat little if at all below that of the tropics, the influence of both these causes in the production of disease, is, in our opinion, insignificant, when compared to that of breathing air that has been previously respired, and which, moreover, is commonly charged with animal and vegetable effluvia. That the same diet and habits of life in the country or small towns, would not be attended with a degree of sickness and mortality corresponding to that found in the crowded portions of large towns, is, we think, beyond a doubt.

In Paris, comparisons instituted between the parts chiefly occupied by such as live at ease, with those inhabited by the poorer orders, would seem to show that the proportion of mortality is regulated less by the density of population, than by the opposite circumstances of ease and poverty.* That this may be the case under the circumstances of climate and means of nourishment which exist there, we will not pre-

* The results of the extensive and extremely interesting researches of M. Villot relative to the changes in the population of Paris, show that the three arrondissements presenting the smallest portion of mortality, namely, an average of one in forty-two of the population per annum, are precisely those recognised as the richest, whilst the three presenting the greatest rate, namely, about one in twenty-five, are noted as the poorest.

tend to deny; but in this country, where absolute want of food, and that of the best kind, is unknown, the evils of poverty we are convinced come from different sources, and more especially from those we have mentioned.

Those desirous of examining into the immediate sources of the mortality of Philadelphia for the four years from 1827 to 1830 inclusive, are referred to table E. which contains the amount from each particular disease, or other cause. We have thought it unnecessary to include the preceding years, there being a similar calculation for them in the tables previously given in this Journal.

An examination of our records of mortality for the last twenty-five years, will show that during the whole time, the number of deaths from *malignant* or *yellow fever* is only about 125. This information may appear strange, even at home; but how much more so abroad, in Europe for instance, where the dread of this disease has alone perhaps deterred many from visiting the country, and raised obstacles to our commerce by the enforcement of vexatious quarantine regulations in many ports. The simple fact we have here stated relative to our exemption from yellow fever, should, we think, entitle our vessels to general pratique, or at least lessen very greatly the detention to which they are so frequently subjected, especially in the South of Europe.

To what this great exemption for so long a period is to be ascribed, and what share of the happy influence has been exerted by quarantine regulations, more general and better paving, with greater cleanliness, are questions it would be very interesting to solve.

The various periods of life at which the deaths occurred, are exhibited in table G. from which it appears that the deaths of such as were under the

1st year, constitute about 48 per ct. or nearly one-half of all those under the 20th year, and			22 per ct. of the mortality at all ages.
2d	“	“	66 per ct. of all under the 20th year, and about
			31 per ct. of the mortality at all ages.
5th	“	“	81 per ct. of all under the 20th year, and about
			55 per ct. of the mortality at all ages.
10th	“	“	89 per ct. of all under the 20th year, or about
			42 per ct. of the mortality at all ages.

15th year, constitute about 93 per ct. of all under the 20th year, and
about

44 per ct. of the mortality at all ages.

20th	"	"	47	"	"	"
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All over the

30th year, constitute about 40 per ct. of the mortality at all ages.

40th	"	"	28	"	"	"
------	---	---	----	---	---	---

50th	"	"	18	"	"	"
------	---	---	----	---	---	---

60th	"	"	11.3	"	"	"
------	---	---	------	---	---	---

70th	"	"	6.2	"	"	"
------	---	---	-----	---	---	---

80th	"	"	2.3	"	"	"
------	---	---	-----	---	---	---

90th	"	"	0.7	"	"	"
------	---	---	-----	---	---	---

100th	"	"	0.001, or about 1 in 1000.			
-------	---	---	----------------------------	--	--	--

For the purpose of ascertaining whether any influence was exerted by the late epidemic visitation upon the mean duration of human life as formerly determined, we have included a series of ten years in our table. The result of the estimate shows a diminution in the mean duration from that exhibited by our former calculations, which were founded upon data furnished by the fourteen previous years, namely, from 1807 to 1820 inclusive. The average for the last ten years is 28.53, whilst that formerly presented for the period mentioned, was 29.40. In the year 1823, when the greatest mortality occurred, the mean duration fell as low as 26.67. It is not pretended, as we have elsewhere stated, that calculations founded on such data as we possess, can give the mean duration of human life for Philadelphia with precision, one important obstacle to the attainment of which is, that the periods of mortality designated are not sufficiently numerous. It is however the nearest approach that present circumstances will admit us to make towards ascertaining this important point relative to the *laws of mortality*. For the purposes of regulating estimates of risk and adventure, it would we think for several reasons, afford a safe minimum.

The mean duration of life for that portion of inhabitants residing in the more central parts of the town, in good houses, and abundantly provided with all the necessaries of life, must be much above that of the general average for all conditions, including the blacks as well as the poorer class of whites. Now, as these last, though they furnish by far the largest proportion of mortality, and consequently present the greatest risks, seldom apply for life insurance or annuities, it is evident that ventures founded upon estimates of the chances of life in which they are included, must afford great profit, insurance being commonly effected upon that class in which the average value of life is much the greatest.

With regard to the mortality of particular diseases, as exhibited in table F, we have not much to add to what we have already mentioned either on this or the former occasion. It has been shown that fevers, bowel complaints, and inflammations have been much more prevalent within the period included in the present calculations than in that embraced by the preceding. This will perhaps be most strikingly demonstrated thus:—

The average mortality of *fevers*, from 1807 to 1817 inclusive, was in the proportion of 1 in 13, or 7.7 per cent. of the whole mortality. But since that time, and from the year 1818 to 1828 inclusive, the average has been as great as 1 in 7.4, or 13½ per cent. of the whole mortality, nearly double its usual rate.

The average proportion from *bowel complaints* for the same periods has altered but little, notwithstanding the great increase observed in their number since the commencement of the epidemic. For the first mentioned period it was one in 8.3 or 12 per cent. of the total mortality, and for the last, 1 in 8.6 or 11.5 per cent. of the mortality.

The proportional increase in the mortality from *inflammations*, in the last period though more apparent than that of bowel complaints, is much less marked than that of fevers. The average of the first eleven years is 1 in 11.8 or 8.4 per cent.; that of the following eleven years, 1 in 9.9, or 10 per cent. During the last five years, viz. from 1826 to 1830 inclusive, the average has increased so as to constitute 13 per cent. of the entire mortality, which it will be seen is very nearly the proportion of fevers when these were most prevalent.

Of *dropsies*, the average proportion for the first period is 1 in 16, or 6.2 per cent. of the whole mortality, which rate was slightly increased during the last or epidemic period, so as to constitute 1 in 15, or 6.6 per cent. of the entire mortality. During the last five years, which, as already shown, has been distinguished by the prevalence of inflammatory disorders, the proportional mortality from dropsies, has been about equal to what it was during the greatest prevalence of fevers, proving that the agency of both forms of disease in the production of hydropic affections is about equal.

Contrary to what we have found to be the case in regard to the proportional mortality from the last mentioned diseases, that from *consumption*, compared with the general mortality, has rather diminished during the existence of the epidemic influences. Thus we find the average for the eleven years from 1807 to 1818, inclusive, to be 1 in 6.3, or 15 per cent. whilst for the following eleven years, it was as in 6.8, or 14.6 per cent. During the last five years, that is to say, since the subsidence of fevers and increase of inflammatory disorders, the average mortality from consumption, compared to the general

mortality, has been 1 in 6.5, or 15.3 per cent. It must not be forgotten that in estimating these several ratios, the *still-born* were deducted from the yearly sums of mortality; had they been retained, as they often are in such calculations, the proportional mortality of particular diseases would of course appear much less.

Estimates formerly given exhibited the influence of the months and seasons upon the mortality both of adults and children. It was shown from a series of observations including twenty years, how the relative mortality of the months for adults stood, when arranged according to the order of their decreasing mortality. As we did not then show the respective proportions of the months when all made equal to thirty-one days, we now adopt this measure. The result for the twenty years specified is the following order and distribution:—*

1. August - - -	6632	7. April - - -	4370
2. July - - -	5887	8. November - -	4361
3. September - -	5309	9. February - -	4283
4. June - - -	4699	10. January - -	4112
5. October - - -	4554	11. December - -	4072
6. March - - -	4371	12. May - - -	3892

Arranged according to the mortality of adults alone, and supposing them all to consist of thirty-one days, the months placed in the order of their decreasing mortality, would stand thus:—

1. August - - -	2845	7. November - -	2432
2. September - -	2716	8. July - - -	2429
3. April - - -	2609	9. June - - -	2409
4. October - - -	2560	10. January - -	2390
5. February - -	2501	11. December - -	2252
6. March - - -	2480	12. May - - -	2224

The relative mortality of the several months for those under twenty years of age, would stand, according to a similar arrangement, thus:—

1. August - - -	3787	7. March - - -	1891
2. July - - -	3458	8. December - -	1820
3. September - -	2591	9. February - -	1782
4. June - - -	2290	10. April - - -	1761
5. October - - -	1994	11. January - -	1722
6. November - -	1929	12. May - - -	1668

* See Table IV. of our former series of calculations. It may be proper to observe that the present is one of the few instances, in which the *still-born* have not been deducted in our estimates of mortality. As, however, our object is to show the relative, and not the actual mortality, their exclusion would not have altered the results.

The influence of the seasons in the production of the mortality of both adults and children in our locality, is rendered strikingly conspicuous by this mode of calculation. In the estimates for children, the disparity existing between the months exhibiting the maximum and minimum, or greatest and least proportions of deaths, compared with the difference between the months showing the like proportions for adults, demonstrates most forcibly how much more under the influence of the seasons those in the early periods of life are, than such as have arrived at maturity. With adults the difference in these extremes is only about 21 per cent. whilst that of children is no less than 55 per cent. For the purpose of investigating this interesting subject in still greater detail, we have constructed table H. which exhibits the infantile mortality per month at the respective ages or periods of life. A period of five years was deemed quite ample for this purpose, and instead of returning to the time embraced in our first, we have taken them from the last years of our estimates. The periods designated in our table are four—the first giving the mortality under the first year; the second, that occurring between the first and second years; the third, that between the second and fifth years; and the fourth and last, which embraces no less than fifteen years of life, namely, from the fifth year to the twentieth. The proportion of still-born were deducted from the mortality under the first year.

The months of the five years *equalized* and exhibited in the order of their decreasing mortality, with their respective proportions, stand thus:—

	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20.	Totals.
1. July	836	249	117	120	1322
2. August	546	317	120	165	1148
3. Sept.	377	221	140	185	923
4. June	510	148	84	105	847
5. February	382	109	123	131	745
6. October	324	127	117	153	721
7. March	322	119	122	138	701
8. April	342	107	125	122	696
9. Dec.	269	90	114	135	608
10. Nov.	267	90	114	132	603
11. January	281	81	102	109	573
12. May	250	98	107	107	562
	4706	1756	1385	1602	9449

It hence appears that by far the greatest mortality occurring in

childhood takes place in July, June, and August, months distinguished from all others by their high temperature, and that heat is the great enemy of early life in our city.* It is interesting to observe that the destructive influence of this agent has lost much of its power after the first year of life, and that after the second year it is scarcely perceptible, there being but little variation in the columns representing the monthly mortality after this period.

If we take the mortality for the months of June, July, and August, we find that the proportion occurring under the second year of infancy is about four times greater than that which occurred during the same months for the whole eighteen succeeding years of life; whereas, for the three months of November, December, and January, the amount of mortality under the two first years of life, is but little above that of the eighteen succeeding years.

It will be observed that the month of September stands among the highest months in the scale of infantile mortality, differing however from those with which it is associated, by having a larger proportion of deaths distributed under the later periods designated.

For the diseases proving most frequently fatal to childhood, with the ages at which they occur, we refer to Table VIII. of our calculations formerly published.

At the time of making our first series of statistical calculations we were so deficient in the data necessary for ascertaining the correct proportion of mortality for the black population separately, that we were compelled as we then stated, to appeal to conjecture for some of them, or abandon the interesting subject entirely. We are now happy to have it in our power to place our estimates upon a better foundation, possessing not only a longer period for observation, but being furnished through the census taken last year with the exact proportion of this class of the population. In Table E. we have exhibited the respective proportions of both white and black mortality and population, with the annual ratio of deaths in each, during the ten years from 1821 to 1830 inclusive. This estimate differs in some respects from the one formerly given, one of which is, that the proportion of still-born has been deducted, a circumstance calculated, as we have before observed, to lessen the rate of mortality compared to population, but to increase the proportion from particular diseases compared with the whole.

* For the average temperature of these and other months in Philadelphia, we refer to Table I. of our former calculations.

The result of our calculations shows a disparity in the proportions of white and black mortality, compared with the population, which though not quite equal to what we had computed it for the five years succeeding 1820, is still most appalling for the African descendants. The greatest mortality among these in any single year was in 1820, when it amounted to 1 death in 16.9 inhabitants. The smallest in 1830, when the ratio was 1 in 27.2. The average for the whole ten years is 1 in 21.7, whilst that for the whites alone during this unusually sickly period is 1 in 42.3. The lowest rate of mortality for the whites occurred in 1821, and was 1 in 49.1 inhabitants, the highest in 1823, when it amounted to 1 in 33.8. We regret exceedingly that the black mortality was not recorded separately for some time previous to 1820, as we should then have been enabled to ascertain its exact proportion in the years when a fever prevailed in some parts of the town, which confined its attacks to the blacks alone, sparing the whites that even lived among them.*

The fact last mentioned is of itself sufficient proof of the existence of some peculiarity in the African constitution, which distinguishes it from that of the white, and when connected with the opposite circumstances of their much greater exemption from some other varieties of fever, to which whites are extremely liable on the application of the causes, as for example, the yellow and even intermittent forms, the evidence is rendered still more positive.

The late Joseph M. Paul, of this city, whose ardent philanthropy was actively directed towards the African race, and who consequently took a particular interest in every thing calculated to shed light upon or ameliorate their condition, undertook the year previous to his death, to trace out the particular diseases which occasioned the mortality of the coloured population. But this tedious task, which consisted in consulting each individual certificate deposited at the Health Office, he was forced by declining health to abandon, after completing only one year, namely, 1827, the tabular view of which, showing the mortality for each week, he had the kindness to transmit to us. The investigation of the sources of the greater mortality of

* Accounts of this singular epidemic may be found in Dr. Jackson's paper in the Philadelphia Journal of the Medical and Physical Sciences, Vol. I. No. II. p. 321, and in Vol. III. No. VI. p. 193, of the same periodical. The disease, which was of a bilious and remittent character with typhoid symptoms, made its appearance in May, and extended with the increase of warm weather, terminating as an epidemic in September. The deaths from it in the Alms-house, whither a great many were carried, were about one in six.

the blacks affords a highly interesting subject, and had time allowed we should have continued the labours commenced by our deceased friend. But this has not been permitted us, and we are consequently obliged to confine ourselves on the present occasion to the results furnished by a very limited period, hoping yet to find leisure to extend the observations so as to include other years, or to see the subject taken up and completed by some other person.

The diseases comprehended in the statement furnished us, with the respective mortality of each, are as follows. The names of some with few or no deaths are retained, to show that the proportion set down to them in the general bills of mortality, must belong for the most part or altogether to the whites. We have adopted the alphabetical order:—

Diseases.	No. of Deaths.	Diseases.	No. of Deaths.
Apoplexy - - -	2	Brought over - - -	379
Catarrh - - -	7	Insanity - - -	1
Cholera - - -	16	Mania a potu - - -	3
Consumption - - -	92	Measles - - -	0
Convulsions - - -	37	Old age - - -	19
Debility - - -	28	Palsy - - -	1
Dropsies - - -	13	Small Pox - - -	56
Drowned - - -	3	Still-born - - -	38
Drunkenness - - -	8	Sudden - - -	22
Dysentery and Diarrhœa -	29	Unknown - - -	46
Typhus Fever - - -	34	Various - - -	143
Other Fevers - - -	89		
Hives - - -	4	Total - - -	746
Hooping Cough - - -	8	Still-born - - -	38
Inflammation of the Brain	0		
Inflammation of the Lungs	9	Exclusive of Still-born	708
Carried over - - -	379		

From this view it appears, that of the total mortality of the blacks, in the year 1827, namely, 708, exclusive of still-born, the proportion from consumption was 1 in 7.6, or 13 per cent.; from fevers 1 in 5.7, or 17 per cent. which it will be seen, is a much larger proportion than the deaths from fevers bore to the general mortality for the same year, viz. 1 in 10; and from bowel complaints 1 in 15, or 6.3 per cent. The number that died in the alms-house was 155.

The actual proportion of deaths for each month is as follows:

1. January	-	-	-	52	7. July	-	-	-	62
2. February	-	-	-	44	8. August	-	-	-	58
3. March	-	-	-	38	9. September	-	-	-	63
4. April	-	-	-	44	10. October	-	-	-	91
5. May	-	-	-	40	11. November	-	-	-	103
6. June	-	-	-	55	12. December	-	-	-	96

When all made equal to thirty-one days, and arranged according to their decreasing mortality, with their respective proportions, the months assume the following order:—

1. November	-	-	-	106	7. June	-	-	-	57
2. December	-	-	-	96	8. January	-	-	-	52
3. October	-	-	-	91	9. February	-	-	-	48
4. September	-	-	-	65	10. April	-	-	-	44
5. July	-	-	-	62	11. May	-	-	-	40
6. August	-	-	-	58	12. March	-	-	-	38

Of the number 746 actually reported, 401 were males, and 345 females, the deaths of females being about 1 in 14, and of females 1 in 22 of their respective proportions of the population. That the mortality of males should thus be found to exceed that of the females 13 per cent. is a result not to have been expected, when it is considered that the female portion of the black population exceeds the male 32 per cent.

The ages or periods of life at which the mortality occurred are as follows, viz.:—

Under 2 years. (still-born excluded)	-	-	-	-	-	190
Between 2 and 10	-	-	-	-	-	56
All under 10	-	-	-	-	-	246
Between 10 and 20	-	-	-	-	-	43
All under 20	-	-	-	-	-	289
Between 20 and 30	-	-	-	-	-	110
“ 30 and 40	-	-	-	-	-	113
“ 40 and 50	-	-	-	-	-	91
“ 50 and 60	-	-	-	-	-	41
“ 60 and 70	-	-	-	-	-	25
“ 70 and 80	-	-	-	-	-	19
“ 80 and 90	-	-	-	-	-	11
“ 90 and 100	-	-	-	-	-	6
100 and over	-	-	-	-	-	3
All over 20	-	-	-	-	-	419

The proportion of deaths at particular periods of life compared with the general mortality, may be reckoned thus:—

All under 2 yr's constitute 1 in 3.7 or 28 per ct. of the whole mortality.

“ 10	“	1 in 2.8 or 34	“	“
“ 20	“	1 in 2.4 or 40	“	“
“ 30	“	56	“	“

In concluding our present statistical labours, we would remark that it has been our object to supply facts of a general character, rather than to pursue details through all their bearings. To have dwelt more minutely upon the many interesting topics developed in the course of our researches, would, we feared, have overcharged the subject, and deterred many from pursuing it, whose partiality for statistical investigations are not very strong. To those fond of such inquiries we have presented abundant materials and left ample room for their employment, as the results we have drawn from the data are only the most prominent that presented themselves. We have seldom indulged in comparisons with other places, and never with our neighbouring cities, our object having been to present facts as they exist, whether these be favourable or unfavourable to the character of our locality for salubrity. Persons who undertake estimates for other places, are often led to the commission of errors, unintentionally of course, from not being acquainted with some local circumstances calculated to affect the results very materially. Such causes have frequently led to mistakes with regard to the proportional mortality of Philadelphia. We have lately seen with some regret a repetition of them in a respectable cotemporary journal, in which the population of Philadelphia is represented about 6400 less than actually exists within the limits of the bills of mortality.* It is needless to add that such an error in the commencement, completely invalidates the whole series of comparative estimates. In such matters, partiality for a favourite city should never be allowed to interfere, and lead to the concealment or palliation of evils where they exist. On the contrary, these should as far as practicable be fully exposed to view, so as to lead when possible, to their removal or correction. Without such an application, medical statistics would lose half their value, and instead of being, as it actually is, a highly practical, sink to the level of a mere speculative branch of knowledge.

* New York Medical and Physical Journal, Vol. I. p. 456.

TABLE A.

Abstract from the Census of the City and County of Philadelphia, taken in 1830, by order of the General Government, showing the number and description of inhabitants within the built parts of the town.

WARDS AND DISTRICTS.	WHITES.																										
	MALES.													FEMALES.													
	Under 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100, &c.	Under 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100, &c.	TOTAL.
City Wards	4608	3557	3323	4547	7589	4425	2589	1374	685	243	84	16	2	4500	3847	3956	4944	8763	5134	2963	1833	1064	438	128	24	5	70662
Northern Liberty } Wards }	2253	1638	1423	1585	2886	1627	974	466	268	69	23	1	0	2185	1666	1535	1674	3203	1934	1096	711	467	183	50	1	1	27921
Southward, and } other incorpo- }	4219	3965	2885	2889	4646	3508	1621	678	298	100	18	6	1	3853	3567	2794	3172	4943	3343	1715	888	475	163	48	9	1	49835
N. Liberties, un- } incorporated }	183	155	185	134	241	145	97	66	29	5	1	0	0	197	140	152	117	220	130	79	56	34	10	4	0	0	2380
Penn Township	197	151	132	152	243	158	89	60	23	9	3	2	0	184	148	141	136	255	138	70	54	35	12	1	1	0	2401
	11460	9466	7948	9303	15603	9861	5361	2644	1303	426	129	25	3	10219	9368	8578	10040	17384	10690	5923	3542	2075	806	231	35	7	153169

TABLE A.—CONTINUED.

WARDS AND DISTRICTS.	BLACKS.													TOTAL WHITES AND BLACKS.
	MALES.						FEMALES.						TOTAL.	
	Under 10	10 to 24	24 to 36	36 to 55	55 to 100	100, &c.	Under 10	10 to 24	24 to 36	36 to 55	55 to 100	100, &c.		
City Wards	975	1076	1092	695	179	8	1041	1872	1606	894	351	7	9796	80458
Northern Liberty Wards	119	111	117	71	31	0	135	170	137	79	32	0	1002	28923
Southwark, and other Incorporated districts	436	400	445	318	137	6	416	546	538	288	100	5	3665	53470
N. Liberties, unincorporated	12	7	10	6	3	0	9	10	6	10	0	0	73	2453
Penn Township	7	20	14	7	5	0	8	16	13	9	7	0	106	2507
	1549	1614	1678	1097	355	14	1639	2614	2300	1280	490	12	14642	167811

TABLE B.

Births per annum in Philadelphia, from 1821 to 1830 inclusive, with the respective proportions of the Sexes.

Year.	Males.	Females.	Totals.	Excess of males per annum.	Excess of males per cent.	Proportion of Births to Population.
1821	2630	2417	5047	213	8.	Average proportion of births to the population 4.42 per cent. or as 1 to 22.6.
1822	3021	2701	5722	320	10.5	
1823	2977	2836	5813	141	4.7	
1824	3062	2771	5833	291	9.5	
1825	3444	3182	6626	262	7.6	
1826	3526	3219	6745	307	8.7	
1827	3581	3452	7033	129	3.6	
1828	3694	3506	7200	188	5.	
1829	3638	3357	6995	281	7.	
1830	3996	3632	7628	364	9.1	
	33569	31073	64642	2496		

TABLE C.

Exhibiting the Births in Philadelphia, for each month of ten years; namely, from the year 1821 to 1830 inclusive, designating the numbers of each sex.

YEARS.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1821	245	227	210	186	242	206	180	207	185	167	195	177	209	186	222	218	247	217	225	181	239	212	235	225
1822	267	236	285	244	257	232	301	178	230	217	241	182	270	211	242	232	239	242	267	236	297	242	265	222
1823	299	266	250	218	238	221	199	201	186	215	201	209	267	163	264	254	279	233	266	260	269	221	253	262
1824	279	228	274	242	234	248	224	211	227	193	235	215	259	206	243	205	290	270	296	234	238	238	259	263
1825	368	241	290	269	265	281	286	250	276	220	235	235	267	253	303	300	291	265	314	275	272	253	323	314
1826	325	297	286	262	349	281	233	196	228	244	181	241	297	273	312	327	285	288	276	250	280	260	329	349
1827	307	280	266	267	325	304	216	227	300	234	259	236	287	272	274	286	310	331	331	317	315	309	346	341
1828	322	307	320	299	352	325	278	261	286	277	282	264	295	288	338	301	321	295	336	271	328	301	347	318
1829	330	293	305	315	324	302	269	246	281	256	249	234	289	249	281	255	262	282	317	281	274	269	328	292
1830	370	325	323	303	310	302	318	239	304	274	264	266	324	273	319	293	384	337	313	318	347	306	338	328

TABLE D.

An estimate of the proportion of Deaths in the City and Suburbs of Philadelphia to the Population, from the year 1821 to 1830 inclusive, showing the rate for each year, together with the average of the series. Note. Still-born excluded.

Year.	Annual Mortality.	Population for each year.	Proportion to Population.	
			one in	per cent.
1821	2961	124934	42.19	2.37
1822	3334	129253	38.76	2.57
1823	4372	133721	30.58	3.26
1824	4284	138343	32.29	3.09
1825	3539	143126	40.44	2.47
1826	3845	148073	38.56	2.59
1827	3659	153300	41.89	2.38
1828	3971	158488	39.90	2.50
1829	4001	163960	40.99	2.44
1830	3948	169536	42.94	2.32
			10) 388.54	25.99
Average mortality per annum			38.85	2.59

TABLE E.

An estimate showing the respective Mortality of the White and Coloured portions of the Population of Philadelphia, from the year 1821 to 1830, inclusive, exhibiting the proportions in each year, and the average for the whole period. Still-born excluded.

Year.	Annual Mortality.		Population for each year.		Proportion of Deaths to Population, as 1 in	
	Whites.	Blacks.	Whites.	Blacks.	Whites.	Blacks.
1821	2320	642	114065	10869	49.1	16.9
1822	2813	521	118008	11245	41.9	21.5
1823	3612	760	122088	11633	33.8	17.5
1824	3598	686	126308	12035	35.1	17.5
1825	3078	461	130675	12451	42.4	27.0
1826	3353	492	135191	12882	40.3	26.1
1827	2954	705	139963	13357	47.4	18.9
1828	3314	657	144700	13788	43.6	20.8
1829	3400	602	149696	14264	41.0	23.7
1830	3405	543	154737	14799	45.4	27.2
					423.0	217.1
Average of the ten years					42.3	21.7

TABLE F.

Exhibiting the Principal Causes of the Mortality in Philadelphia, for the four years from 1827 to 1830 inclusive.

YEARS.	Whole mortality per annum exclusive of still-born.	Still-born.	Bowel Complaints.					Fever.										Inflammations.										Total of Inflammations.	Convulsions.		
			Consumption.	Cholera.	Diarrhea and Dysentery.	Totals.	Bilious and Remittent.	Inflammatory.	Typhus and Nervous.	Intermittents.	Malignant.	Undesignated.	Totals of the foregoing fevers.	Puerperal.	Hectic.	Scarlet.	Inflam. of Lungs.	Pleurisy.	Bronchitis.	Catarrh.	Totals.	Inflam. of Bowels and Stomach.	Peritonæum.	Liver.	Spleen.	Kidneys.	Bladder.			Uterus.	Totals.
1827	3659	286	323	239	145	381	133	1	104	11	0	113	363	10	4	1	138	122	384	277	99	7	41	1	0	4	0	152	486	26	
1828	3971	321	581	290	139	429	173	2	59	21	0	118	373	7	2	0	143	5	27	49	224	125	19	39	0	4	1	1	189	483	315
1829	4001	293	638	237	137	394	106	2	66	12	1	73	260	16	5	9	209	16	37	60	322	127	21	42	0	0	2	6	198	631	269
1830	3948	302	636	236	125	361	18	4	63	9	0	71	228	15	5	10	149	9	46	30	234	132	18	25	1	0	5	1	182	505	306

TABLE F.—CONTINUED.

YEARS.	Dropsies.			Debility and Decay.	Old age.	Small Pox.	Whooping Cough.	Apoplexy.	Sudden.	Measles.	Atrophy, Tabes, and Marasmus.	Gangrene and Mor- tification.	Sore Throat.	Burns and Scalds.	Hemorrhages of all kinds.	Cancer and Scirrhus.	Asthma.	Colic.	Epilepsy.	Rheumatism.	Syphilis.	Tetanus.	Suicide.	Parturition and Childbed.	Abscess.	Aneurism.	Angina Pectoris.	Aphlie.	Casualties.	Drowned.
	Of Head.	Chest.	Indisignated.																											
1827	107	26	38	219	228	76	100	47	29	6	39	28	9	23	29	24	15	12	10	4	3	10	4	8	21	5	0	6	22	46
1828	110	16	57	253	302	84	107	71	57	46	55	38	23	16	21	18	13	6	17	8	7	4	7	3	22	7	5	5	19	53
1829	147	49	91	287	286	65	81	67	37	51	61	53	31	2	16	30	18	16	10	7	6	7	9	4	25	3	4	6	29	38
1830	152	46	84	282	320	65	86	71	35	53	105	7	31	17	32	27	4	18	9	3	6	6	7	11	14	1	2	20	41	

TABLE F. CONTINUED.

YEARS	Drunkennes.			Drunkennes and Mania a Potu.	Mania a Potu.	Excessive heat and drinking cold water.	Diseases of the Heart.	Disease of the Spine.	Eruptions.	Erysipelas.	Fracture.	Disease of Hip- Joint.	Dyspepsia.	Round Head.	Fungus Hæmato- des.	Gout.	Hernia.	Insanity.	Jaundice.	Palsy.	Laudanum to ex- cess.	Phlegmasia Dolens.	Scrophula.	Stone and Gravel.	Spina Bifida.	Tumors.	Teething.	Ulcers.	Violence.	Wounds.	Unknown.	Varioloid.	Worms.
	Drunkennes.	Mania a Potu.	Drunkennes and Mania a Potu.																														
1827	53	69	122	4	12	4	12	4	10	6	3	1	7	23	1	4	5	6	8	31	3	1	22	3	3	10	4	1	1	2	111	0	4
1828	30	82	112	10	20	1	20	1	6	4	8	1	3	29	4	6	4	47	9	41	9	1	14	2	3	11	7	19	3	4	71	2	4
1829	34	94	128	0	29	19	29	3	2	9	4	3	4	29	3	4	6	13	9	54	6	0	19	2	0	3	11	12	1	3	89	1	4
1830	25	95	120	29	26	0	26	0	2	7	5	0	1	26	3	4	8	11	8	36	6	2	18	2	8	5	14	16	3	3	76	1	4

TABLE G.

The ages or periods of life at which the Deaths in Philadelphia, have occurred in each year of a series of 10 years; viz. from 1821 to 1830 inclusive, together with the average mean duration of life for each year, and for the whole period.

Years.	Under 1 year	Between 1 and 2	Between 2 and 3	Between 3 and 5	Between 5 and 10	Between 10 and 15	Between 15 and 20	Between 20 and 30	Between 30 and 40	Between 40 and 50	Between 50 and 60	Between 60 and 70	Between 70 and 80	Between 80 and 90	Between 90 and 100	Between 100 and 110	Between 110 and 120	Whole No. of deaths per an. exclusive of still-born.	Mean duration of life for each year and average.
1821	633	215	193	102	50	88	405	396	324	221	151	97	61	21	1	0	0	2961	30.14
1822	696	243	193	121	78	90	424	441	348	264	217	150	67	18	4	0	0	3331	31.12
1823	854	401	399	181	81	151	537	536	462	312	214	137	76	24	3	1	4372	26.67	
1824	936	384	364	221	93	162	409	486	435	309	218	177	67	20	3	0	0	4284	28.04
1825	836	250	232	128	58	82	432	479	373	263	171	122	85	24	4	0	3539	29.12	
1826	814	380	285	134	65	123	479	452	380	271	299	135	98	32	7	1	3845	29.22	
1827	830	293	215	131	74	128	444	515	364	264	157	131	67	22	4	0	3659	28.85	
1828	933	395	329	148	70	113	498	459	372	206	191	150	90	12	2	3	3971	27.11	
1829	965	364	303	158	67	108	477	497	342	266	207	163	65	17	2	0	4001	27.62	
1830	1003	325	260	139	75	99	508	518	353	267	195	110	70	24	2	0	3948	27.45	
	8550	3250	2673	1466	711	1144	4563	4579	3753	2643	1933	1352	746	214	32	5	37614	285.34	
	Average mean duration of life																		28.53

TABLE H.

Showing the Deaths per month that occurred in the early periods of life, during a series of 5 years, namely from the year 1826 to 1830 inclusive. Still-born excluded.

YEARS.	January.				February.				March.				April.				May.				June.						
	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20			
1826	49	14	14	22	72	26	22	31	73	31	33	36	36	36	28	26	39	25	31	26	66	34	18	20			
1827	51	19	18	21	74	23	18	16	74	18	16	12	18	14	25	19	32	16	15	14	106	27	17	19			
1828	60	14	22	23	61	11	23	18	66	16	18	25	37	18	20	19	55	17	18	19	114	40	11	18			
1829	59	17	24	19	72	21	23	23	55	28	38	33	75	15	36	25	63	29	25	23	77	24	15	23			
1830	62	17	24	24	67	18	21	24	54	26	17	32	66	17	15	21	61	11	18	25	131	18	20	22			
Totals per mo.	281	81	102	109	346	99	111	119	322	119	122	138	331	104	121	118	350	98	107	107	494	143	81	102			
				675				701				674				562				820							

TABLE H. CONTINUED.																											
YEARS.	July.				August.				September.				October.				November.				December.						
	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20			
1826	157	63	32	21	105	55	16	25	51	35	21	50	43	21	28	32	47	19	15	25	41	10	19	20			
1827	150	36	22	39	101	47	15	43	58	38	22	29	61	14	18	24	44	15	24	33	54	14	25	30			
1828	195	65	22	26	100	71	44	36	73	40	30	47	64	34	31	41	64	20	31	23	67	20	22	29			
1829	135	34	14	18	123	79	29	27	97	60	32	30	84	25	25	36	52	15	20	25	55	33	23	30			
1830	199	51	27	25	117	65	16	34	86	41	31	23	72	33	15	20	52	18	17	22	52	23	25	24			
Totals per mo.	836	249	117	120	546	317	120	165	365	214	136	179	324	127	117	153	259	87	110	128	269	90	114	135			
				1118				894				721				584				608							

ART. II. *Case of Immobility of the Jaw and Tuliacotion Operation.*

By VALENTINE MOTT, M. D. &c. &c. [With a Plate.]

ON the 7th of April, 1831, I was consulted in the case of Miss Mary Park, aged seventeen, of Southbridge, Massachusetts.

Her attending physician, Dr. SAMUEL HARTWELL, gave the following relation of the case. "In the autumn of 1822, she had an attack of typhus fever: the symptoms were mild in the commencement of the disease, and nothing unusual occurred until the middle of the third week, when tumefaction and redness were discovered on the left cheek, accompanied with slight delirium and general aggravation of fever.

"At the end of the third week, a dark vesicle, about the size of a pea, appeared at the angle of the mouth, announcing the existence of sphacelus, and in a few days extended to about two inches in diameter upon the side of the face. A crisis of fever now supervened, which was followed by sloughing of the whole gangrenous portion, leaving the teeth and gums exposed. Upon its cicatrization the jaws remained immoveably fixed, being apparently tied together by a ligamentous band within and about the cicatrix. Her food was introduced into the mouth through a space formed by the removal of a tooth on the right side. The first set of teeth and the alveolar process of the diseased side, were detached by caries. Most of the second teeth were developed in a few years afterward.

"No mercury was used in the treatment of the fever. Her general health is now very good."

Her countenance was much disfigured, and presented the appearance represented in Plate I. fig. 1.

As the only means of permanently overcoming the closure of the jaw, was the removal of the cicatrix, I determined upon excising and replacing it by sound integument from the face and neck.

Accordingly on the 8th of April, assisted by Dr. VACHE, and in the presence of Drs. HARTWELL, BARROW, WILKES, HOSACK, and several others, I performed the operation.

It was commenced by carrying an incision from a little within the upper angle of the mouth, around the outer margin of the cicatrix, to a little within the lower angle of the under lip, and by the immediate removal of the newly-formed parts included within it. The adhesions between the jaws were next divided, which enabled me in consequence of the relaxation thus produced, to insinuate between the

teeth of the opposite side, the point of the lever used in my former cases, with which I finally succeeded in opening the mouth.

This point accomplished, the lips were brought together at the angle of the mouth by a suture, and I proceeded to detach a portion of integument sufficiently large and of corresponding shape to replace the part removed. See dotted lines, Plate I. fig. 1. It was turned into the space it was intended to fill, leaving a tongue three-quarters of an inch in breadth, connected with the adjacent part and sufficient for all the purposes of circulation. The cut edges were adjusted with extreme accuracy, by means of interrupted sutures and adhesive straps: the lower wound was contracted as much as possible by adhesive plasters, and the whole covered with lint, compress, and bandage.

Previous to the operation she took sol. sulp. morphine, double strength of Majendie's formula, grt. xiv. The operation occupied about an hour, and was sustained with a firmness peculiar to the female sex.

Evening.—Had been sick at her stomach, and vomited some coagulated blood, which had no doubt been swallowed during the operation.

April 9th. Found her sitting up at the side of the bed. She felt, she said, very comfortable, and had passed a good night. Hardly any perceptible swelling of the face. As far as the parts can be seen all looks favourable. Ordered her a dose of sulph. magnesiae. She can depress the lower jaw, by the effort of the will, to the extent of about half the width of the finger. I advised her to continue the motion of the jaw, from time to time, as much as the soreness at the angle of the mouth would permit.

10th and 11th. Continues to do well.

12th. Some little tumefaction under the eye, but she makes no complaint. Directed an emollient poultice to the hard dressings upon the wounds on the neck.

13th. Several poultices have been applied to the neck, which have softened the lint; upon carefully removing it and the plasters, the wound was again dressed in the same manner.

14th. Complains of a little head-ache from not sleeping well last night. Felt great comfort from the removal of the stiff dressings yesterday. Bowels are in a good state. Cannot say to what the head-ache is to be attributed; she thinks it owing to the loss of sleep last night. The swelling of the cheek has subsided. Changed the lint again to day.

15th. Found her in bed this morning, with pains in her limbs generally, and with some swelling of the right knee, and tenderness to the touch; passed a bad night; her pulse is much more frequent than natural. Is not aware that she ever had rheumatism before. Directed general and local treatment for her disease. She makes no complaint of her face, which in all respects is very promising. I removed three of the stitches from around the angle of the mouth, and reëplied lint and plasters.

16th. Still in bed. Has less pain and swelling in the knee, but more in the foot and ankle; generally she feels better. Removed another stitch from the lower part of the patch. The wound of the neck looks well; dressed it with ungt. resinæ and plasters.

17th. To-day she is generally better, but feels most pain and tenderness in the knee and ankle of the other leg. Says her face feels very comfortable. I removed three stitches from the upper part of the patch, and for the first time all the plasters, and washed the whole surface. Adhesion seems to have taken place at every point of the flap. Dressed the face as yesterday.

18th. Every part of the flap appears to have united. Dressed the wounds with dry lint. Advised her to move the lower jaw a little downward, every day several times. The rheumatic affection is seated in the right wrist and fingers. Ordered the use of tinct. colchici.

19th. Passed a better night; but both arms are now nearly useless. Consented to-day to be bled. Repeated the infus. sennæ as a cathartic; dressed the face, which looks very well.

20th. Feels generally better. Both arms still much affected. Drew the edges of the wound in the neck together with adhesive straps. Directed the tinct. colchici to be increased.

21st. In all respects better; a slight rheumatism yet continues in the left hand and arm. The colchicum has produced some cathartic action on the bowels. I dressed the face and wound as yesterday; directed her to open the jaw more frequently; and to continue the colchicum.

22d. Found her sitting up, and says she is more comfortable. The left hand and wrist still a little tumefied and painful. Face and wound continues to improve; dressed them as yesterday. Has more motion in the lower jaw.

23d. Is free from all pain to-day, and feels quite well again. Ordered the colchicum to be discontinued. Dressed the wound as before.

25th. Continues free from rheumatism. The wound improves, and was dressed as yesterday. The jaw moves more freely.

May 12th. Patch in the cheek entirely healed. (see Plate I. fig. 2.) The wound in the neck is nearly closed. She can open the jaw sufficiently wide to admit solid food.

14th. She leaves town to-day in good spirits, and delighted with the result of the operation.

Although I have before often operated for immobility of the jaw, and with the happiest results, and have once removed a deformity occasioned by a hole in the cheek, by the Taliacotion method, in the New York Hospital, with perfect success. I have never before seen it necessary to combine both operations in one individual; and the gratifying termination of this long and arduous case, is a convincing proof of the excellence of the means employed, and of the power of art in repairing the ravages of disease, and in relieving its distressing consequences.

25 Park Place, New York.

N. B. A letter was received from Miss P. by the lady with whom she resided here, in which she stated her health to be excellent, the jaw to have acquired increased motion, and her friends much pleased with her improved appearance.—*July.*

ART. III. *Case of Immobility of the Jaw, successfully treated by Professor Mott's Complicated Lever, and a Modification of his Operation.* By JESSE W. MIGHELS, M. D. of Maine.

IN June last, J. T. of Hebron, Oxford County, aged twenty, called on me for advice. On examination I found that his under jaw was almost immoveably fixed to the upper, by a firm, ligamentous adhesion, extending from the cuspidatus tooth on the left side, backwards to the coronoid process. There was no lateral motion, and but a slight motion downwards. His face was badly disfigured, the left cheek being much fallen in, and the mouth drawn towards one side. Being able to separate his front teeth a little, he had conveyed his drinks between them, and by using them in masticating small portions of solid food, had worn away the upper incisors so as to leave an opening of nearly a quarter of an inch.

He had been in this situation ten years; said it was occasioned by neglected mercurial ulceration of the cheek and gums. He also informed me that it had been cut five times by eminent surgeons—twice by the late justly celebrated Professor SMITH, who, by the use of a

wooden wedge succeeded in separating his front teeth about half an inch, but that it irresistibly contracted as the wound closed. On the whole, the case too nearly resembles the one related by Professor MORR, in No. IX. p. 102 of this Journal, to need any further description. I proposed the same operation as there described, but the patient objected to having his cheek cut through. I therefore varied the operation so as to save the cheek entire, and am induced to believe that this is an improvement worthy of notice; for, independent of its saving at least *some* pain, it leaves the face free from scars, and there is no danger of the breaking of stitches and slipping of adhesive straps during the cure.

The patient being seated in a chair in a strong light, his lips separated and firmly held by assistants, I passed a very sharp two-edged knife, flatwise, in the direction of the teeth, back to the angle of the jaw, and carefully dissected the morbid adhesion from the gums; I then turned the edge so as to cut through the hardened mass crosswise, and as far back as I could. This so far loosened the jaw as to admit the *vise* betwixt the first molar teeth, and I then expected that a trifling force would be sufficient to finish the operation, but I have no doubt that the force applied was equal to one hundred pounds, and when it yielded it was attended with an audible crash resembling the laceration of ligaments. By keeping the jaws asunder by a wooden wedge, and the cheek from the gums by a soft sponge for a few weeks, the patient completely recovered the use of this jaw and the natural shape of his face.

Minot, Maine, June, 1831.

ART. IV. *On the Adaptive Powers of the Eye.* By H. MORTON, M. D. of New York.

THE functions of the organ of vision have engaged the attention of anatomists and physiologists to a greater extent than any other organ in the animal economy. Its general anatomy is sufficiently well understood, but its physiology, we are inclined to believe, has not kept pace with the general advancement of medical science. Its functions as a dioptical instrument, or an organ of vision, offers a considerable field for observation and experiment, and a more accurate knowledge of these functions would perhaps enable us to explain more satisfactorily a great variety of its phenomena that are now obscure. Such knowledge might also enlighten us on its pathology, both

surgical and clinical, and as it is the organ through the medium of which the mind acquires by far the greatest proportion of its ideas, it might not be without its influence in a metaphysical point of view.

We find in the human species, as well as in most of the lower orders of animals, two organs of sight, but which, as regards the function of vision, should nevertheless be considered as *one single organ*; their analogous distribution of nerves and muscles, their perfect unison in motion depending upon this distribution, the necessity there seems to be that objects should be painted upon the same relative part of the retina of each eye, appears to indicate that nature has constituted them *one organ*. Whether this unity of function could be extended to the microscopic eyes of insects, our present knowledge of comparative anatomy will not permit us to decide.* In the human subject, however, it is evident.

The general phenomena of vision is sufficiently well explained by the present known laws of optics. It is known that rays of light proceeding from objects or bodies, after passing through the different humours of the eye, and having undergone certain changes as regards their direction and colour, are received upon the retina or expansion of the optic nerve, and there form an image resembling the object from which they emanated; the image, however, is much smaller than the object, and inverted. These facts are sufficiently proved by the examination of the recent eye of an animal, and also by instruments constructed to resemble the human eye; but upon examination we will find that the eye, however recent it may be, has lost its adaptive powers,† and optical

* Our own organ may be rendered microscopic by substituting for the natural pupil, (which cannot be brought to the requisite degree of minuteness,) an artificial opening. If a piece of card be perforated with an ordinary sized pin, and vision directed through it, distinct vision of minute objects may be obtained within half an inch of the cornea. We find nature has adopted the same mechanism in the formation of the eyes of the chameleon; it feeds upon minute insects, and its pupil is so small as to be scarcely visible to the naked eye. "La fente est d'ailleurs si petite qu'on voit à peine sa prunelle au travers."—Cuvier, *Anat. Comp. d'Œil*.

† The observation of M. Majendie upon the dead eye of an animal is equally true of the camera obscura; in fact, the recent eye is no more than a perfect camera obscura, and in both cases the distinctness of the image will be increased by adapting a pupil of the requisite diameter, and supposing the image on the retina of the recent eye is equally distinct when directed to near and distant objects, yet as we are ignorant of the precise degree of distinctness requisite for vision, no certain inference could be drawn from this fact. If the same thing occurs in the living eye that M. Majendie and others have observed

instruments we know must undergo certain adjustments for their proper adaptation. In both cases the focal distance of the lens must be changed, either by motion in itself, which is a theory advocated by many—or else its relative position as it regards the retina must be altered—or, which is equivalent, the retina or screen upon which the image of the object is received, must either approximate or be removed further from the lens, according as the object viewed is nearer or more remote, unless the organ or instrument be adapted for parallel rays. It is presumed that there is a mechanism by which the animal eye is thus enabled to adapt itself to points of vision at different distances: yet there are some ingenious men who can see no necessity for this power and would explain the function as the result of habit and attention. Notwithstanding, however, the subject has received a great deal of attention, and a great many truly ingenious and interesting experiments have been made, they seem to have tended rather to expose the errors of other theories than to establish the true one.

The eye is unquestionably the most complicated organ in the whole system, and therefore an explanation of its functions necessarily demands an intimate knowledge of all its complicated parts; not merely the general laws of optics applicable to it, but also its minute anatomical structure, as well as the physiological sympathies existing between its different parts. To consider the eye as a mere optical instrument, or even the most perfect “camera obscura,” which it certainly very closely resembles, would by no means lead us to an *accurate* knowledge of its general functions, and least of all the peculiar function we are now considering.

In comparing the eye to any optical instrument made to resemble it, we should conclude that the skill and power which formed the one, endowed it with properties which it would be absurd to expect to find in the other. Omniscient skill and Omnipotent power was exercised in forming the human eye and adapting its various parts to harmonize in action, while the optician’s instrument, how-

in the dead, that is, all objects, whether near or remote, are equally distinct in outline upon the retina, where will we find an explanation of the fact, that in vision near objects are actually more distinct than distant ones. It seems only to increase the difficulty, whereas, if we admit that near objects are rendered more distinct by a certain adaptation of the eye, (which can be proved even on the recent subject, by making use of a diaphragm having an opening of the requisite diameter,) we at once can account for the different distinctness of near and distant objects.

ever perfect it may be, is, after all that human ingenuity can suggest, but an imperfect imitation of its model.

Among the variety of opinions entertained respecting the adaptive powers of the eye, that appeared the most satisfactory at the time, which supposed an alteration in the spherical form of the eye produced by the action of the recti muscles, whose consentaneous action either lengthened or shortened its axis. The great and permanent convexity of the cornea in near-sighted persons seemed to favour this idea, and it was inferred that a palpable motion productive of this effect would be detected upon examining an eye while in the act of adapting itself to points of vision at different distances. Experiments were therefore made to establish this fact; the eye of an individual was observed through a microscope in such a manner that the slightest motion, if any, would be detected, but no motion adequate to the requisite effect could be observed. Neither could it be fairly inferred that the great convexity of cornea in near-sighted persons was the cause of their defect of vision, for in the ingenious experiment of Dr. Young, the eye, (although the influence of the cornea was destroyed,) still retained its adaptive powers. That a very great degree of convexity in the cornea would be attended with a certain defect, as it regards the adaptive power, is possible; such might be the case in congenital malformation; but it can scarcely be considered as the cause, when this defect is consequent or depending on constitutional derangement, too violent or long-continued action of the organ, or when the eye has been subjected to too intense a degree of light, or even in sudden transitions from one medium of light to another, when the eye, at least for a time, loses its adaptive powers. Cases analogous to those enumerated frequently come under the observation of medical men. A patient now under my care, until the age of thirteen, possessed the ordinary range of vision, but too close application to study together with confinement, brought on constitutional derangement, and upon convalescing this defect of vision was observed, and has continued for a number of years; at the present time occasional indisposition has an evident influence on the adaptive powers of the eye. Mr. ANNESLEY states that hemeralopia or night cecity, is especially prevalent among the people of India, and he considers it as owing to accumulations of morbid secretions in the *primæ viæ*, and is always remedied by free purgation.

From observing the fact that a double concave lens would remedy the defect in a near-sighted eye by counteracting, as it was supposed the too great convexity of the cornea, it would appear that the chief attention of experimenters had been diverted from the other struc-

tures of the eye, and led them to seek for the explanation of the power of adaption, in the alteration of convexity in the cornea alone. Now there are some instances where no undue convexity can be observed, and yet the eye has not the power of adapting itself to distant vision. We frequently find artists who are in the habit of using one eye only on minute objects, in process of time become near-sighted in the eye so used. If we observe attentively the eye of a near-sighted person, when directed to distant objects, and fix our attention upon the iris, we shall find, when a lens is placed before the eye, that the diameter of the pupil is gradually altered, the iris shortly becomes stationary, and until this change in the iris has been effected vision is not distinct; evidently proving that a certain change must take place in the eye, notwithstanding the aid of the artificial lens.

The influence of the iris in regulating the admission of light did not escape the observation of the earlier anatomists: it was observed invariably to expand in an intense, and contract in a less vivid light. If the eye be directed for a moment towards the sun, the pupil attains its least diameter. The reverse takes place in the entire absence of light—the pupil is enlarged to its greatest extent. Such a provision was necessary to guard the delicate organ from the effects of intense light, but experiment and observation would lead to the conclusion that the iris, besides possessing this instinctive power of self-preservation, influences directly the function of vision, that while it excludes from the eye too intense a light, at the same time it has the power of admitting only such rays as are necessary for distinct vision. We might consider the iris as acting under two kinds of sensibility, or perhaps mere modifications of the same sympathy—that sensibility which protects the retina from too much light, and that *visual* sensibility, (if we may be allowed the term,) which, when the iris has adapted it-self to the intensity of light in the surrounding medium, adapts the pupil to the admission of only those rays which are requisite for distinct vision. To be assured of this we have only to observe the eye while performing its function of vision, when it is directed generally to a distant prospect; the iris is adapted to that degree of light consistent with its normal function, but the instant an object is singled out in the distant prospect, we can observe a sensible alteration in the diameter of the pupil, the result of a new impulse, and on closer observation the iris will be found to vacillate as the object singled out is more or less *distinctly* seen; or perhaps it would be more correct to say, the object becomes more or less distinct in accordance with the motion of the iris. The

motion of the iris when objects are viewed at different distances has been observed, but sufficient importance has not been attached to it. Under the influence of solar light, this visual sensibility of the iris is much less apparent than in its absence; its motion, however, is sufficiently evident even to the naked eye, but in a more obscure light it is palpably manifest.

A case is related by Mr. TRAVERS, in his work on the eye, of an individual who possessed directly a voluntary power of adapting the eye. We are inclined to believe that to a certain extent this power is possessed by most individuals; that is, objects at any point of vision may be rendered indistinct by what would appear to be a very slight exertion of the two internal recti muscles, and if the iris be observed at the same time, it will be found to vacillate, contracting or enlarging as the object becomes distinct, or the contrary. It is true, this motion in the iris, though observable, is not as extensive as when the eye is directed, by candle-light, in quick succession from distant to near objects, and might leave a doubt whether so slight a change in the diameter of the pupil would be adequate to produce the effect.* A consideration of the form and action of the iris, together with the peculiar properties of the crystalline lens, will perhaps leave less reason to doubt the influence the iris possesses of regulating the visual rays proceeding from objects at different distances.

A great deal of minute investigation has been made for the purpose of deciding the question, whether the iris, properly speaking, can be considered a muscle. It appears to be a matter of no very great importance whether we rank it as a muscle or not, provided we can ascertain its structure and function: at any rate, we find it endowed with some of the properties peculiar to muscular fibre, and it is sufficient for our present purpose to consider it as such. It is certainly a tissue endowed with peculiar properties; its sympathies or sensibility is peculiar to itself. Anatomists describe it as a flat, circular muscle, perforated in the centre; this description would be strictly accurate only in autopsic examinations, but will not accord with its actual form in the living animal, especially during its state of dilatation, for then it may be considered rather a funnel-shaped muscle, resembling the surface of an extremely obtuse truncated cone, its top or apex being the pupillary margin, its base the edge inserted or arising from the circular margin of the choroid coat. In the living

* I have, however, frequently been able, while observing the eye of an individual in this condition, to inform him when his vision was distinct or indistinct, by merely observing the changes in the diameter of the pupil.

subject, the pupillary margin is somewhat in advance or anterior to its base or origin, and corresponds in direction with the anterior convexity of the crystalline lens. This peculiar conformation gives to the iris a controul over the admission or exclusion of rays of light, as it regards the lens, which would not obtain were it either a flat muscle, or its points of origin and insertion reversed. This peculiar mechanism enables the iris in the most expeditious and effectual manner to exclude all collateral and unnecessary light, and at the same time admit such rays as come in direct lines from the object viewed, and confines them to the central portion of the crystalline lens. Had its base or insertion been anterior to its pupillary margin, it is evident that the diameter of the pupil could not have been adapted to receive the direct rays proceeding from objects, without at the same time admitting an undue and unnecessary quantity of light within the eye: had it been a perfectly flat muscle the same difficulty, though to a less extent, would necessarily follow. Its present form and action, is, like all the works of nature, a master-piece of mechanism, and calculated in the most perfect and admirable manner to produce the desired result.

The action of the iris, its contraction and dilatation, should perhaps be viewed as a motion "*sui generis*," for there appears to be no other muscle in the system precisely analogous to it. In considering muscular action, we are accustomed to connect the ideas of the origin, insertion, and fulcrum of each muscle, and from thence infer the intended result or effect produced by their contraction, but in the iris we find only its origin, unless we consider its pupillary margin as its insertion, but even then we want a fulcrum: in fact, its muscular motion is peculiar to itself: the tongue is the only muscle analogous to it in action, for after protruding the tongue beyond the teeth, as far as the motor muscles attached to its root and inferior surface will permit, we still have the power of elongating and of moving in different directions the end or tip to a considerable extent. This power is possessed in a much greater degree by many of the lower orders of animals—the cow, sheep, dog, &c.; the cow can thrust its tongue a considerable distance within the nostrils; it is, we conceive, an analogous species of muscularity by which the leech and common earth-worm are enabled to move.

Such being the admirable mechanism of the iris, we shall have less hesitation in admitting that a very slight alteration in the diameter of the pupil will be fully adequate, not only to regulate the proper quantity of light, but also controul the admission of the necessary visual rays. It may appear, however, more satisfactory after taking

into consideration the peculiar properties of the crystalline lens. It will be sufficient for that purpose to consider the lens of the human eye as a transparent substance, having its two surfaces composed of equal segments of the same sphere, and consequently will possess the common properties of the optician's instrument, denominated the double convex lens; its actual form, according to PETIT, is that of a compressed sphere having its anterior surface the segment of a greater sphere, its posterior the segment of a less. The changes, as it regards direction, that rays of light undergo in passing through a dense medium of this configuration, can be ascertained by experiments upon the artificial lens with a sufficient degree of accuracy to enable us to draw conclusions relative to the powers of the natural lens of the eye. The general properties of a double convex lens are, that rays of light which pass through it *furthest* from its centre or axis, are made to converge the soonest, and those rays which strike *nearest* to its centre or axis converge the least. All parallel rays in passing through the lens have the greatest focal distance, and it is this point, the focal distance of parallel rays, by which opticians designate the power of their different lenses, calculated either by the convexity of the sphere, of which they are a segment, or else from actual measurement, by receiving the rays of light from the sun, which rays may be considered as parallel, owing to its distance.

According to the known laws of optics, rays of light proceeding from objects at different distances, after passing through a double convex lens, are brought to different foci, the rays of light from the more distant objects being parallel, have necessarily the longest foci; the same object, if brought nearer the eye, and seen in its full magnitude, must be seen by converging rays, the focal distance of which, according to the laws of optics, would be less than when the object was more remote, and consequently in one or the other instance vision would be defective—if distinct in the remote, it would be indistinct when the object was brought near, or the reverse. Such would be the case in an eye wanting an iris; such we find is the case in optical instruments, the "*camera obscura*," &c.; the defect in either can be remedied by the same or nearly similar means. The iris being capable of contraction or dilatation, accommodates the pupil to the admission of only a certain number of the more parallel or direct rays whose focal distance is uniform, and at the same time excludes all indirect or collateral light, which, if admitted, would only tend to render the image indistinct. In the camera obscura the same effect may be produced by substituting for the iris artificial diaphragms; in the instrument now before me, though imperfect in its

construction, the screen upon which the images are formed, may be moved considerably beyond the focal distance of the lens, so that no objects whatever appear upon it, and by interposing an artificial pupil of a certain diameter, objects become apparent. It would appear that the interposition of the iris, while it excludes a portion of the indirect rays, confines those that are admitted to the central part of the lens, where they consequently undergo less refraction than if they were suffered to be acted upon by parts further from its centre or axis, and consequently have their focal distance increased. The opinion entertained by Mr. Travers on the adaptive power of the eye, was based upon the supposition of a change of figure in the crystalline lens. He supposed it an elastic body, influenced by the muscular action of its surrounding parts, and that both its figure and site were changed, whereby its refractive powers were increased or diminished. Now, the influence of the iris renders such a supposition unnecessary, because the diameter of the pupil alone will controul or alter the refractive power of the lens, as it regards certain rays, by admitting the rays of light to be acted upon by different parts of the lens possessing at all times different powers of refraction.

The field of *distinct vision* is extremely limited, scarcely perhaps the twelfth of an inch as it regards the retina; if we observe a person while reading, we see the axis of the eyes successively moving from point to point, and can observe, even in our own case, that if we attempt to view distinctly two points, distant from one another the eighth of an inch, we feel sensible of an evident exertion in the muscles of the eye to direct its axis from the one point to the other. In viewing a distant prospect the eye possesses a much greater range, but is also much less distinct, and individual objects in this prospect can only be rendered more distinct by directing the eye to a limited and circumscribed point, and the rays of light emanating from that point must necessarily pass through the more central portions of the crystalline lens.

The perfect structure of the crystalline lens, together with its surrounding mechanism, give to it additional powers; it is composed of concentric lamina differing in density, (and consequently in the powers of refraction,) from the centre to the surface; it is contained within a transparent capsule, between which and the lens is a peculiar fluid, denominated the liquor MORGAGNI. From its anatomical structure an optician would infer that it was the most perfect instrument of its kind, and the immense extent of vision, from a few inches to millions of miles, would confirm the opinion. Artificial lenses are subject to certain errors, denominated by opticians the caustic curve,

by refraction or spherical aberration; from the established laws of matter, the crystalline lens would be subject to the same error to a certain extent; this defect is counteracted in a measure by its structure, but chiefly by the interposition of the iris; the structure of the lens, aided perhaps by the other humours of the eye, the aqueous, vitreous, &c. render the organ perfectly achromatic. To avoid these various defects, opticians have endeavoured to imitate nature by combining two plano-convex lenses, and interposing a diaphragm between the two plane surfaces; in this, however, they have imitated nature imperfectly, for in the one it is fixed and immoveable, while in the other it is not only possessed of motion, but a motion in every respect subservient to the function of distinct vision, as well as the preservation of the organ. In adapting the spyglass for the view of distant objects, it becomes necessary that the lenses made use of should be brought to their respective focal distances, which is effected by elongating the tube: at the same time this produces an analogous effect to that of introducing a perforated diaphragm, for as the tube is elongated, and the lens removed from the object part of the instrument, the *virtual* diameter of the orifice is diminished, or the range of vision lessened, because those rays of light which would have struck the lens, if near the object orifice, when it is removed further from it do not even reach it, and if placed sufficiently remote, will effectually exclude all but the more direct and parallel rays, which we think are those chiefly concerned in *distinct* vision.

As it regards the defect of vision in near-sighted eyes, as well as that change which is found to take place in old age, it would appear that too much importance has been attached to the influence of the cornea, and accounted for by the action of the recti muscles, and in old age by the absorption or diminution of the different humours. I have frequently examined the corneas of near-sighted persons, where not the slightest degree of undue convexity could be detected; and on the other hand, I have seen many who had unusually convex corneas, and yet did not labour under the defect usually attributed to this peculiar conformation. I have recently had this observation confirmed in the instance of an individual under my care, whose cornea was so extremely convex, that when the eyelids were closed, it formed a protrusion elevating the lid several lines above the sclerotic surface, and evident at a considerable distance when the eye was closed and made to roll in its socket: the adaptive powers of the eye were nevertheless unusually perfect. There are, no doubt, many instances where this defect of vision is accompanied with a great convexity of cornea, but it does not necessarily follow that it should be the cause of it.

This great convexity of cornea, which in the human species is considered a defect, is found to exist in many animals that seek their prey by night. All the animals of the species "*Felis*" are remarkable for their acuteness of vision: "*the eye of the lynx*" has become proverbial: like the domestic cat, their corneas being the segment of a smaller sphere, may perhaps be considered much more convex than that of the human eye, but the perfection of their organ would seem to result from the expansive and contractile power of the iris. The immense play of the iris in the domestic cat, and the acute sensibility of the retina to light, is truly astonishing: now the owl does not possess an equal play of the iris, and we find in the broad glare of daylight they see but dimly if they see at all. There is no doubt but the pliancy or mobility of the iris may be increased by practice: we find that artizans constantly engaged in minute work, provided they do not use an artificial lens have the microscopic powers of the eye greatly increased; but the constant and long-continued action of the iris deprives it of the power of requisite contraction for distant vision; and again, sailors who are much accustomed to discern distant objects, and use their eyes a great deal by night, have their respective powers much more developed and perfect.

The pathology of the organ of vision affords a great number of facts which would seem to strengthen the opinion as it regards the influence of the iris in the proper adaptation of the eye. In the fifth vol. of the *Medico-Chirurgical Review* a case is related of total, though temporary blindness, attended with excessive enlargement of the pupil, and we know that sudden fear produces a similar effect upon the iris, and attended with the same defect of vision. In most cases of "*iritis*," indistinctness, followed by total loss of vision, commences with the irregular contractions of its muscular fibre: and after the operation for artificial pupil, when the iris has lost its powers of contraction and dilatation, the eye also loses its adaptive power, and requires the aid of artificial lenses. If the irregular contractions of the iris render vision indistinct, it would be important in the operation for artificial pupil, to take into consideration not only the requisite or most convenient diameter of the pupil, but also its form and situation; for Mr. GUTHRIE in his work on artificial pupil, remarks, that the more the rays of light are directed to the central portion of the lens, the powers of vision are much more augmented than when the artificial pupil is made so large that rays are admitted upon its circular margin. Indeed opticians are generally agreed that only the central portion of their lenses are of use, and by the adoption of diaphragms, they render useless, as it regards the transmission of light,

any other portion. The central portion may be all that is necessary in optical instruments, as they are generally used to view single objects, or at any rate their field of vision is extremely limited, and only make use of the more parallel and direct rays. But the mechanism of the human eye gives it additional powers. Our bountiful Creator, in giving to the eye of man its powers of adaptation, enables him to survey at one glance immense portions of the universe, and under the controul of his will, by the same power can examine in detail each single object; in like manner the camera obscura possesses a great range of vision, but it possesses not the power like the eye to single out individual objects and render them more distinct. Neither the anatomy nor the physiology of the organ of sight will support the hypothesis which presumes the adaptive power to be the effect of the action of the recti muscles; in fact, this muscular apparatus connected with the eye, is designed for a motion of a different nature than that of changing the spherical form of the ball itself; it is for the preservation of the organ itself, and for the purpose of directing, under the controul of the will, the axis of the organ to the object viewed. To support the hypothesis of the four recti muscles, we must presume that they act in unison, that they all contract or relax at the same moment; this presumption, has however, never been proved by observation or experiment; but supposing they did, it would only produce the required change in the figure of the eye, when its axis was directed in a horizontal direction, directly forward; for the instant the axes of the eyes assume an oblique direction, one of the four muscles must be in a state of relaxation. But if we closely examine the motions of the eye, we will be satisfied that all the muscles do not contract simultaneously, but follow the general law of muscular action throughout the system; that is, when one muscle contracts its antagonist relaxes. It is true we have the power of contracting the two internal recti at the same time, and direct the pupil inwards towards the nose; but we have no similar power over the two external recti, and thereby to direct the axes of both eyes outwards at the same time; and it may be explained upon the difference of nervous distribution—nerves of voluntary motion being distributed to one pair of muscles, and nerves of involuntary to the other; this subject, however, has become one of so much interest, since the elucidation of the nervous system by Mr. BELL, that it should not be even referred to in so cursory a manner. If the influence of the iris is as important as it really appears to be, it will explain those changes which are observed to take place in more advanced life. As we descend in

the vale of years, all the muscles, articulations, tissues, &c. become more rigid and less pliant than in youth, and there seems no reason why the muscular fibre of the iris should be an exception to this general law of nature. When the iris by age loses its activity and pliability, and no longer acts in unison with the visual sensibility of the retina, the eye is in that condition which frequently follows certain constitutional derangements, iritis, or when the operation for artificial pupil has been undergone.

Our limited knowledge of the operation of mind upon matter will not enable us to decide whether the motions of the iris are or are not wholly independent of the will, and the difficulty is still further increased by the complicated nervous distribution to the organ: there is no organ in the system to which so many different nerves are sent, and all designed for distinct functions. It receives nerves of voluntary motion from the third pair, or *motores oculorum*, a nerve of involuntary motion from the fourth or *trochleus*, branches from the fifth or *ophthalmic* of Willis, which is a nerve of ordinary sensation, and this last branch is joined by a nerve from the great sympathetic. In addition to these, the extreme branches of the optic nerve are freely distributed on its internal surface. To explain the sympathies consequent to this extensive nervous distribution, if it could be done, would afford matter for a distinct treatise.

If the views we have taken of the properties of the lens and the influence of the iris be correct, the mechanism by which the eye adapts itself may be better understood. The iris, by its contraction or dilatation, admits the requisite number of visual rays to pass through that portion of the crystalline lens which will cause them to reach the retina at their proper foci, while at the same time it excludes in the most effectual manner all unnecessary light, and all collateral or indirect rays. With this view of the subject, many of the anomalies of vision can be much more satisfactorily explained. The singular defect of vision which occurs occasionally to Mr. ABERNETHY, the talented professor of St. Bartholemew's Hospital, is of that description which we are rather inclined to believe should be attributed directly to the irregular contractions of the iris, though induced, it is highly probable, by a certain morbid condition of the retina. On certain occasions he can only see one-half of any object viewed; on observing himself in a mirror, but half of his face is distinctly visible; looking at his name upon the door-plate only a part of the letters are distinctly seen. A similar effect can be produced in the instrument now before me, (constructed as nearly as possible to

resemble the human eye,) by bringing the opening in the artificial iris either above or below the central portion of the lens, whereby certain of the direct rays coming from the object are intercepted, and consequently only a part of the image will be distinctly painted upon the screen. The cases which Mr. Abernethy alludes to, and considers analogous to his own, are purely the result of a morbid condition of the nervous system, and cannot be explained upon the known laws of optics. The instances he quotes are those where individuals see, or rather think they see, objects that are invisible to persons around them. Such cases are by no means uncommon, and in the complaint denominated "delirium tremens" are almost a constant symptom. The case related by Mr. A. was that of a gentleman, who, while reading in his study, on turning his head, observed, as he thought, a woman in a red cloak seated in a chair near him. So complete was the illusion, that he addressed her and inquired how she came there: receiving no answer, he ordered her out of his presence, and expostulated with her for not obeying him. At length he rose from his seat, rang for his servant and ordered him to turn her out. The servant assured him that there was no woman or red cloak in his presence: he then sent for his physician, very naturally concluding that his nervous system was deranged.

Now it cannot be presumed that in this instance there were rays of light reflected from a woman in a red cloak and impinging upon the retina of his eye; but it is equally certain that at some former period all this had taken place, and that the gentleman had actually seen just such an accoutred woman, whose image upon the retina had produced a certain impression upon the sense of vision, and at the time the mind may have taken cognizance of it. At any rate, the image once upon the retina left a certain impression, which the organs constituting the sense of vision had the power to exercise and with the same degree of vividness as it had once appeared; not by a voluntary effort of the mind, because it appeared whether he would or not. He might say with Macbeth, "Avaunt and quit my sight, unreal mockery hence!" but there it remained "like the air-drawn dagger, in form as palpable as that which once he saw." In fact, we are hourly convinced that the *mind* has as limited a power of recalling *sensations* as it has in exciting or controlling the functions of the involuntary nerves. It would seem that, that portion of the brain which gives origin to the nerves of *sense*, performs its function to a *certain extent*, independent of the cerebrum, or that portion of the encephalic apparatus which is at present considered the organ or

medium for the exercise of intellect or volition; and the mind, however it may recal its own emotions, the result of sensation, has but a limited power over the *sensation* itself.

Let the mind endeavour to picture to itself the person or portrait of an intimate and absent friend, and after the greatest exertion how faint and indistinct the picture will be when compared to that portrait which we must believe the *senses* conjure up during the partial repose of the intellect. When dreams disturb the curtained sleep, how vivid are all the sensations, and yet in what unnatural and absurd combinations do they come before the dozing mind.

“Strange dreams, that give a dead man leave to think.”

Are not these rather the offspring of the senses than involuntary aberrations of the mind? Are not the sensations of the maniac, and the perceptions arising from them, as real and substantial as though they originated from present sensations? and yet we know that the real *material* object, the sound, the smell, and the touch, that once imprinted them on the organs of sense, is not at the moment present.*

Such hallucinations, however, as those recorded by Mr. Abernethy, and others of daily occurrence, should be considered as functional derangements of the whole nervous system, and are to be accounted for or explained by the physiologist and metaphysician, while the defect in his own case is directly owing to an arrangement in the mechanism of the eye, and admits of explanation upon the known laws of optics. For in his own case there were rays of light reflected from a material body and impinging upon the retina of his eye, and we are inclined to believe that upon close examination it would be found that the irregular contractions of the iris brought the pupil in that position as it regards the lens, that the rays of light did not strike equally upon its central portion. The consequence would be that half or a portion of the rays would be intercepted, some of those admitted would be unduly refracted, the remainder would be brought to their proper foci, and that portion of the image would be distinct, the other indistinct or perhaps invisible, according to the extent of the derangement in the action of the iris.

New York, August, 1831.

* Be this as it may, our present knowledge of mind as connected with matter, is by far too limited to lead to any certain conclusions.

ART. V. *Cases of Cutaneous Diseases, with Pathological and Practical Remarks.* By Dr. MILO L. NORTH, of Hartford, Conn.

CASE I.—In the summer of 1818, a child about five years old was affected with a scaly eruption, accompanied with a discharge of limpid and puriform fluid, with heat and soreness, and occupying the neck and upper part of the thorax and shoulders. There were some appearances of disordered first passages.

A mixture of one part of pulverized rhubarb and two of carbonate of magnesia, rubbed in treacle, taken morning and evening, sufficient to procure two or three evacuations daily, in the course of three weeks caused the eruption to disappear, and the skin to become smooth. No external application was used except unguentum sambuci.

CASE II.—Two children of the Rev. C. C. of Vermont, both under five years, were submitted to my treatment in the same season, 1818, for a papular eruption covering nearly the whole surface of the oldest, and entirely that of the youngest. The heat and itching were extremely troublesome, particularly during the night. Several plans of ineffectual treatment had previously been prosecuted under the direction of the physicians in his vicinity. Ten drops of the following liquid were administered three times daily, in an ounce of sweetened water, for several weeks:—R. Acid. muriatici, ʒj.; Alcohol, ʒj.; Misce. The following ointment was applied to the skin morning and evening:—R. Adipis suillæ, ℥j.; Acid. nitrici, ʒj.; Misce. Their complaints, after a primary aggravation of several days, which I had not then learnt was common in the convalescence of cutaneous diseases, began to yield, and within a few weeks entirely disappeared. The father afterwards wrote me that he had prescribed the same course to the children of several of his neighbours with the same happy result.

CASE III.—Mr. S. B. aged sixty, of good general health, accustomed to all the indulgencies pertaining to the pantry and cellar of a wealthy New England farmer, was affected, in the autumn of 1819, with heat, itching, and redness upon the leg, succeeded by scales, and a secretion of acrid, limpid fluid. These symptoms were most troublesome at night while the patient was in bed. From December 15th to January 15th, 1820, as he was of full habit, and had a strong pulse, he was bled twice, took various cathartics and antimonials,

and had the solutions of acetate of lead and muriate of ammonia applied to the affected limb. From the whole course of these remedies, occupying a month, I could not perceive the least benefit. I had urged him repeatedly to curtail his generous diet, but he conformed very poorly to my request. It became, therefore, necessary for me either to discontinue my visits to him, or to persuade him to comply strictly with the proposed course of regimen. Although I was not then so fully convinced as at present, that in the fluctuations of external and internal disease, that of the skin might so utterly absorb the whole morbid action as to leave the digestive organs free from *apparent* disorder, yet I gave him all the assurance I dared, that if he would enter upon the prescribed course of diet, he might hope very soon to be freed from his trouble.

In reply, he laid it down as a principle, warranted by plain common sense, that while his taste was natural, his tongue clean, his stomach free from oppression, flatulence, acidity, and all uneasiness, his appetite *strong*, and his bowels in a natural state, he was unable to perceive any use in the proposed course of self-denial. To gratify my wishes, however, he would consent for a season to its adoption. He then restricted himself to such a course of aliment substantially as is accordant with our most approved authors of the present day on that subject, including an entire omission of cider and fermented liquors, and, without any modification of the medicinal course, he was quite well within two weeks.

Remarks.—The above case disclosed to me experimentally two facts worthy of observation and remembrance, viz. the comparative importance of the hygienic and therapeutic measures employed, and the mode in which morbid action of the cutis may so absorb the internal disorder of the digestive organs as to allow them to carry on their functions without any manifest disturbance. In the younger members of our profession, it needs both firmness of nerve, and decision of opinion, to persevere in a course of diet and medicine when the patient thinks it unnecessary, and in violation of plain common sense.

CASE IV.—*January 22d. 1823.* Capt. H. B. aged eighty-six years, had for thirty years been troubled with ulcers upon the legs, accompanied with a cutaneous eruption gradually increasing to this time. For ten or fifteen years past he had been unable to labour, since which, his disorder had increased more rapidly. Both legs were now enormously swelled, hard, livid, hot, itching intolerably, covered

with scales from the toes to above the knees, exposing a red, leathery surface wherever they fell off, and aggravated by an acrid, watery secretion. He was of very full habit, face red, neck fleshy, pulse hard, and tongue somewhat furred. His legs were so hot and painful that he had but little rest till the latter part of the night, when the febrile disturbances kept up in the gastro-intestinal organs subsiding, he was able to sleep till nine or ten in the morning. He had taken brandy sipping, temperately, three times a day for twenty years at least, and had doubtless taken spirits more or less ever since the revolutionary war, in which he was an officer. He had always eaten meat two or three times a day with such accompaniments as we are accustomed to see on the tables of our substantial farmers. For some time past he had had a diarrhoea, for which an opium pill had been taken every evening. He had followed no course of internal remedies that had proved effectual. Acetate of lead with laudanum, muriate of ammonia, and various kinds of poultices, had been among the topical applications employed.

After a long time spent in arguments and explanations on my part, and much hesitation on the part of the patient, whether to comply with the terms which I proposed, *in limine*, as a *sine qua non*, or to send me home without prescribing, I succeeded in engaging him entirely to suspend the brandy, cider, and opium, and to confine himself exclusively to rice, crackers, milk-toast, gruel, bread and milk, and other articles of a similar kind. Gingerbread, plain puddings, and codfish, were occasionally allowed. He took, every second day, an active cathartic of sulphate of magnesia in infusion of senna, and on the intervening days, pulv. rhei and magnesia combined as a laxation. His drink was a saturated solution of super-tartrate of potass, with as much of the tartrate of antimony in the same as the stomach would bear without disturbance. Flour was the only application made to the limbs.

Although I had taken the precaution to acquaint him that the first effect of the course would apparently aggravate his sufferings, yet I was not prepared to expect the reproachful look and language I received from my veteran patient as I entered his apartment four days afterwards. As he had never passed the bounds of respectable sobriety, he thought it cruel and unreasonable that the faculty could not cure his sore legs! without depriving him of the good things which Providence had put into his hands. He persevered, however, and within two weeks from my first visit, there was an amelioration of all his symptoms. The diarrhoea disappeared, the swelling, heat,

itching, and redness of the limbs diminished, his breathing became less stertorous, and his sleep improved. The watery humour had changed into a thick, purulent secretion. After this change was effected in the morbid secretion, the following was applied morning and evening in conjunction with the above-prescribed course of medicines and regimen:—R. *Acidi nitrici*, ℥j.; *Adipis suillæ*, ℥j.; *Misce*. The nurse told me she frequently removed a saucerful of scales at a dressing.

February 17th.—The legs soft, and healing rapidly. All the symptoms improved. Continued same treatment.

March 22d.—Took my leave of the patient. Legs soft. Eruption gone. Sleeps well. Is able to labour. Adheres to the prescribed regimen.

February 25th, 1824.—Capt. B.'s legs are entirely free from any eruption or ulcer. His health and activity constantly increasing. Adheres to the temperance plan.

August 15th, 1831.—The above patient, now ninety-four years of age, is still living, and I presume very well, as I have heard of no illness that has occurred to him.

Remarks.—This extensive eruption and swelling of the limbs probably prolonged the patient's life, by diverting diseased action from the digestive apparatus and brain, and fixing it upon the skin and cellular tissue. While labouring in the field, the abundance of perspiration, and the salutary employment of the muscular energy, preserved such a balance between the income and expenditure of the system, as to preserve a tolerable share of health. But on becoming more infirm, and gradually relinquishing labour, while the reciprocal effects of alcoholic stimuli and high-seasoned food caused him to take an equal amount of nutriment, the balance of healthy action was destroyed, and a constant gastro-intestinal disturbance produced.

At what point, then, did diseased action commence in this case? I answer—in the digestive apparatus. The long-continued practice of stimulation and excessive repletion, had established a *morbid* appetite, requiring such an amount of ingesta to satisfy its cravings as to transcend the digestive powers, and thus, to the diseased appetite, was added constant irritation of those passages. Here the disease commenced—a purely factitious disease—produced by the “refreshments” of the distiller, and the boasted blessings of a generous table and a good cook. Had this individual shared with the Hindoos in their daily allowance of boiled rice, his case never would have reached the ears of the faculty.

He had originally, and has now, an iron constitution. As proof of this, it is interesting to trace the various efforts it manifested to withstand the noxious effects of his regimen. An ulcer upon each leg first availed as an outlet—a wastegate for the disease of the first passages. These becoming inadequate, the skin in the neighbourhood coöperated in sharing the latent disturbance within. This combined affection of the skin and cellular tissue, served for many years as a vicarious disease. In the mean time the system had become so plethoric, and the adipose substance so abundant, that he was thought by his friends to be on the borders of an apoplexy.

Hence, although there were no positive proofs that the brain was *diseased*, yet we need have no hesitation in saying, that the danger of a sudden failure in that organ was greatly diminished by the cutaneous affection, and, therefore, that this last affection held a pathological relation to the brain, as well as to the gastro-intestinal organs. The large intestines were at length enlisted in behalf of the individual, by a copious, watery secretion, in form of a diarrhœa. This, had it not been thwarted by the opium pills, would doubtless have diminished the plethora, and alleviated the febrile disturbances constantly propagated from the gastric organs. As it was, the diseased process was rapidly increasing in the lower extremities, manifested by the swelling extending above the knees, and by an aggravation of all the symptoms above-described.

From the history of the above case, and the result of its treatment, are we not warranted in the conclusion, that the disease commenced in the gastric organs; that it existed there in a latent state; that, in consequence, the brain became predisposed to disease; that the chronic affection of the lower extremities was sympathetic of the original disorder, vicarious in its nature, and tending to diminish the danger of the more central organs? The writer is fully aware that these suggestions do not put on the air of novelty to those who are acquainted with the pathological doctrines of this enlightened period. But as truth is the only object of his inquiry, and as the above case and its results are substantially similar to many that have occurred to him, and which might be adduced, he deems it matter of gratulation, rather than of apology, that a line of practice which has been, almost without exception, successful, should be found conformable to pathological opinions already established.

I have hitherto confined my remarks mostly to the connexion between diseases of the skin and those of the stomach and associate organs. That there is an intimate connexion between the *scorning*

functions of the skin and the lungs, kidneys and bladder, there can be no doubt. But my own observation has not furnished any striking instances of association in the *diseases* of the skin and these organs.

In the various instances of recession and reëappearance of eruptions which have fallen under my notice, I do not recollect an instance in which the kidneys, spleen, or bladder, have appeared to be the seat of the disease which had been thrown vicariously upon the dermoid system.

Disease, in its various metastases, occasionally passes from the brain, heart, or uterus, to the cutis, and vice versa. The liability to such alternations should be kept in mind, both in reasoning upon cutaneous affections, and in their treatment. Yet the pathological connexion of these organs with the skin is manifested so rarely in actual practice, as to render it unnecessary to trespass further on the patience of the reader in its consideration.

That non-contagious cutaneous diseases, in this climate, generally originate from, and are connected with, a previous morbid state of the stomach, small intestines, liver, and pancreas, may be further established by the following considerations.

1st. From analogy. Gout, erratic rheumatism, itching at the nose from worms, ophthalmia, amaurosis, sore throat, hysteric paroxysms, convulsions, and numerous other irritative diseases, are generally admitted to arise from sympathetic connexion with these organs.

2d. From the consideration that the mucous membrane in the immediate neighbourhood of these organs, and lining them, is the intervening barrier between the general system and all noxious substances swallowed, and is destined to receive their first effects. In animals provided with instinct, directing them what to choose and reject, this membrane may pass for years without disease. But in omnivorous man, this delicate organ is brought in daily contact with articles injurious to its texture and functions; such as tea and coffee at a temperature wholly insupportable to the skin, distilled liquors that cannot be held in the mouth five minutes without sensible pain, acrid and corrosive condiments, rich gravies, pastry, sweetmeats, and in short all the mischievous inventions that the art of modern cookery has congregated from the animal, vegetable, and mineral kingdoms. Nor is the *quality* of these agents all. They are rendered so delicious to the palate, that, in this land of abundance, they are taken in at least double the necessary quantity; and the physician who undertakes to combat American diseases, and overlooks these multiplied causes of gastro-intestinal disturbance, has yet to learn one of his elementary lessons. I have seen a copious crop of

fiery, itching pimples follow within a few hours a free indulgence in pickles, hard peaches, almonds, nuts, fresh pork, or minced pie. I have seen these disturbances as speedily subside by taking one or two compound rhubarb pills, or other bitter stomachic. As all persons are not predisposed to diseases of the skin, other sympathetic effects may be manifested from these noxious impressions; but those who labour under this predisposition, and are willing to observe the effects of particular articles of diet, can perceive an immediate aggravation of their eruption after indulging in the forbidden diet. These effects are often so speedy as to demonstrate that the gastro-intestinal membrane must be the part that suffers: for it must seem impossible that the first operation of an emetic, which removes the internal agent and external disturbance together, can eliminate any foreign principles that may have found their way into the blood.

3d. The proposition is supported by post mortem examinations. The number and variety of lesions in the gastro-intestinal mucous membrane that have been recently reported in our medical journals, show unequivocally that these lesions have heretofore been overlooked. These instances of ulceration, erosion, thickening, and inflammation, are precisely what we should expect from the structure and functions of this membrane. Dr. Gregory remarks that "the pain which accompanies inflammation of the mucous membrane is slight in comparison to that of inflammation of the serous membrane. The intestinal tract is remarkably prone to run into ulcerative action, and the rapidity of this action is worthy of note." *Practice*, I. 276. "Pustulous inflammation in the follicles of the mucous membrane is a disease which readily assumes a chronic character and often terminates in ulceration of the affected cryptæ." *Bayle and Hollard's General Anatomy*. "Without attempting to judge of their reciprocal influence, it is evident that cutaneous diseases often coincide with inflammation of the internal organs." *Biett's Lectures*. "At times diseases of the lungs or alimentary canal are met with, (in dissecting fatal cases of erysipelas,) whose existence had never been suspected." *Ibid*. "Ulcers are very rare on the inner membrane of the trachea and urethra, but very common on the inner membrane of the large and small intestines." *Baillie's Morbid Anatomy*.

4th. The similarity of structure between the skin and gastro-intestinal membrane, strongly marks the connexion between the diseases of those surfaces. Indeed, these organs are considered in structure nearly identical by anatomists, from BICHAT downward, differing only in the absence of the inner cuticle; and even this is supplied by a different substance lining those parts of the intestinal tract

where the epidermis cannot be distinctly separated. The alterations of disease from the external to the internal tegumentary membrane, and vice versa, are like the wanderings of erysipelas, erythema, or herpes from one part of the skin to another. The blotches of the rum-drinker's face are the mere effects of continuous inflammation, and are the index of the scorched and reddened state of the inner surface, which has endured the burning stimulus of gallons and barrels of diluted alcohol. But these considerations are too obvious to detain the reader longer on this head.

5th. Another proof that the gastric organs are the primary seat of disease in cutaneous affections, is drawn from the fact, that in most instances these organs manifest immediate signs of disease in cases of sudden recession of eruption from the skin. This is more especially noticeable in the minor eruptions, such as erythema, roseola, lepra, psoriasis, &c. Every physician knows that patients are uniformly worse in their general health when their disorders have "struck in." Salt rheum and erysipelas, the former of which in common language answers both to lepra and psoriasis of Biett, and the latter to erythema, meet us at every corner. In all cases where the patient's disorder is not of a grave character, there has been a uniform connexion between the gastric organs and skin in these alternations, as evidenced by nausea, faintness, fluttering, pain in the side, stricture about the epigastrium, &c. It is a common occurrence to observe sore ears and other eruptions in children cured by a spontaneous diarrhoea. There is no doubt, however, that the brain and lungs do occasionally receive the burden of a receding eruption.

And here I beg to be distinctly understood, that in establishing the connexion between the non-contagious eruptions and the gastric organs, and the fact that these organs are diseased antecedently to the skin, I do not pretend to explore the ultimate origin of disease. The diseases of both these localities may be, and probably are, the *effects* of an ulterior but obscure cause, influencing the whole habit of body. We say of a fatal erysipelas it has "struck to the brain." But who does not know that the inflammation of the external teguments in erysipelas is nothing in comparison with that which is produced by burns, scalds, &c. and which is attended by no danger? How plain it is that the cutaneous inflammation in the febrile form is the mere index to the deadly disorder within. The popular pathological opinions of the day would refer the ultimate cause of failure to the brain and nervous system. This may be the true explanation: but we are to keep in mind that the lesions already alluded to, which late dis-

sections have detected, are more unequivocal in the lungs and first passages than in the brain.

In cases of the recession of long-continued cutaneous disease being followed by death, "it is not improbable that some fatal mischief arising from some ulterior cause had so weakened the powers of life, that nature was unable to free herself longer from that encumbrance she used to throw off upon the skin."—*Heberden*.

6th. The last consideration I shall adduce is derived from the means employed in the cure of cutaneous diseases. Cathartics, tincture of cantharides, and the arsenical solution skilfully managed, and accompanied with a strict attention to diet will lead to very satisfactory success in the treatment of these complaints. It has been my own plan to commence at once with cathartics, much in the manner recommended by Dr. HAMILTON. Calomel, calomel and jalap, senna and sulphate of magnesia, have been favourite articles, and given every second day to produce free catharsis. In the intervening days a laxative of powdered rhubarb and magnesia. This course should be continued, if necessary, at least four weeks.

As to diet, no absolute rules can be given, but I have seldom known such a patient bear fresh pork, sausages, rich gravies, pastry, nuts, pickles, raw vegetables, stuffings, acrid condiments, or any farinaceous substances recently cooked. Cider and all fermented liquors and fresh pork I have found particularly injurious. I have noticed that melted butter and fat are more indigestible than the same articles in a solid state; and this is accounted for on the principle, that when masticated with bread and other articles, they render these substances impervious to the saliva. Even in a solid state they are to be used very sparingly if at all.

Local applications are always thought necessary by the patient, and are of use, though in a very subordinate degree compared with internal remedies. I have found nothing equal to nitric acid and lard, in the proportion of one ounce to the pound. If the diseased surface is quite hot and inflamed, the ointment should be weakened by the addition of an equal quantity of lard, and even this should be delayed till the surface indicates some improvement from the internal remedies. I formerly used to raise the lard to a high heat, and gradually add the acid, which was thus decomposed, and an oxygenated ointment formed. This has appeared to me more efficacious than the same composition formed without heat. This should be applied every evening, and followed in the morning by a tepid alkaline wash, consisting of ʒij. of the sub-carbonate of potash or soda, to one pound of

water. When the eruption is general, an occasional warm bath in the evening, containing from four to eight ounces of one of the above articles, would be desirable.

Should the skin not become decidedly improved in four weeks, the cathartics should be suspended. The daily administration of an aperient, of rhubarb and magnesia, with a blue pill, every evening, will often effect a cure if continued several weeks, and if the patient can be brought to a rigid obedience of the rules of regimen.

If these measures fail, let five drops of the tincture of cantharides be given every morning for six days, when it will be proper to increase the dose, one drop daily, till heat at the epigastrium, or symptoms of strangury, show that it has arrived at the maximum dose. The medicine can then be continued in a somewhat less quantity for four or six weeks from commencing its use. By this very moderate medication, the patient is acquiring more restraint over his morbid appetite by his lengthened discipline: an acquisition of great moment to an individual possessed of a predisposition to cutaneous affections.

Should the cantharides fail, continuing all other means, it would be necessary to commence the use of Fowler's arsenical solution, in the dose of three drops every morning, eating a light breakfast, and gradually increasing it to twenty drops. In the dose of twenty drops twice a-day, I have known it produce surprising effects in the rapid disappearance of an extensive cutaneous and subcutaneous affection of the back. The mucous membrane of the stomach was, however, so much irritated by these powerful doses, that a severe ophthalmia was sure to be produced if the medicine was continued over ten days at once.

If, by thorough explanations and arguments, the patient can be brought to a compliance with the prescribed diet, and made to feel that thence forward he is to use great caution in the indulgence of appetite, the most difficult point is gained. This difficulty is the grand reason why we meet with so many incurable cases. It will be seldom in our climate, that, with this point gained, one of the above courses, and generally that of cathartics, will fail to restore the patient to health.

The inquiry arises, and it shall be despatched very shortly, how does the mode of treatment illustrate the connection between the diseases of the gastric organs and the skin? No language can form a more appropriate answer than the following, applied by Dr. GOOD to a singular and very obstinate case of lichen: "The patient was at length fortunate enough to be put upon a brisk course of calomel, of

which he took five grains every night, with a purge of rhubarb or cathartic extract next morning, for nearly a fortnight in succession; and, having thus transferred the morbid irritability of the skin to the intestinal canal, the disorder left him.”—*Study of Medicine*. V. 379.

This, say the disciples of BROUSSAIS, is substituting one disease for another, and is producing internal perturbation. The charge is admitted. We apply our remedial agents to the internal tegumentary membrane, while they, by a much more operose method, apply theirs to the external surface by means of leeches, douches, medicated baths, blisters, cataplasms, &c. The practice of Broussais is equally a perturbing course, but applied to a different part of the tegumentary system, with this important difference, that, relating to the diseases in question, it is far less successful. In the administration of calomel, jalap, senna, sulphate of magnesia, cantharides and arsenic, the impressions are primarily and chiefly produced upon the stomach, small intestines, and auxiliary viscera. Tincture of cantharides, applied to the skin, produces vesication. In sufficient doses it must produce an analogous effect on the internal surface. The well known action of arsenic on the skin points out its effect internally. If a solution of tartrate of antimony be frequently given to a patient in peripneumony, to the extent his stomach can bear, and if it be prevented from passing below the stomach and duodenum by calomel and opium, there is produced a crop of pustules on the membrane in question, as is demonstrated by the pustules which appear in the mouth and fauces. And this has long appeared to me a satisfactory explanation of the success of the Italian method of treating pneumonic inflammation; that, by blisters externally, and a factitious disease in the œsophagus, stomach, and duodenum from antimony, the organ originally diseased is surrounded by artificial inflammation, and by the coöperation of the calomel and opium, speedily extricated from danger. If the antimony is allowed to pass into the large intestines, the internal counter-irritation in the immediate neighbourhood of the lungs is prevented, and the principal benefit of the practice is thwarted.

The fact is, the stomach and small intestines are the seat of injuries from without; there disease is first enkindled. By the salutary tendencies of nature, these organs are allowed to perform their functions without transmitting to the sensorium any notice of disease there, while the vicarious, morbid action is thrown upon other parts of the system, and, in patients predisposed, upon the skin. To remove this vicarious action of which the individual complains, we ex-

cite impressions in the very seat of the disease, which are styled perturbations, but which being artificial, serve to transplant the original morbid action, and substitute a new one. This, after being continued from two to twelve weeks, wears out or eradicates the original disease, and then both the vicarious disorder without and the artificial one within necessarily cease.

Hartford, Conn. August 29th, 1831.

ART. VI. *On the Use of Conium Maculatum in Affections of the Female Breast, and in Cancerous Ulcerations.* By STEPHEN W. WILLIAMS, M. D. late Professor of Medical Jurisprudence in the Berkshire Medical Institution.

I BEG leave to select for the Journal the following cases from my medical and surgical note book, in which I have long been in the habit of recording what I conceive to be important facts and cases.

Cancerous ulcerations.—Under this head I propose also to treat of the sequelæ of mammary abscesses, which, if neglected, frequently terminate in cancer. I am inclined to believe that a remedy will yet be found for the cure of cancerous affections, and I think the faculty have underrated the powers of *conium maculatum* in these cases. This medicine was in high repute with the ancient physicians; probably by them it was too much extolled, and like many valuable medicines which were employed by them, it has, from this circumstance, gone into dis-repute. Medicine, like other things, has its fashions. Within half a century, bleeding and powerful depletions have been in and out of fashion at least half a dozen times. Bleeding is now in vogue to a great extent, particularly in chronic affections of the lungs and liver. A reaction will probably soon take place, for, like all violent complaints, a crisis soon obtains. I believe in no *catholicon* in any complaint: what may be useful in one may not be in another, or even in the same in different individuals, owing to peculiarities of constitution. Yet I think that facts in favour of *conium maculatum* are multiplying. The following have occurred in my practice. I am not able to state them so minutely as I could wish, as many years have elapsed since some of them occurred, and I took no notes of them at the time.

CASE I.—A woman from Hawley called upon me in the summer of 1820, with an indurated breast. Several months previously she had

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had a milk abscess, but I do not recollect whether it had ever been opened. At any rate the whole breast became completely indurated, and did not yield to any remedies her physician prescribed. At the time I saw her, the breast was large, the whole substance of it was indurated, unequal, and knotty, and all the integuments of it black. There were very slight constitutional symptoms. I directed the use of the white pond-lilly poultice, (*Naphe advena*,) for a few days, hoping by the use of it to induce suppuration. After this, if any hardness remained, I prescribed the powdered leaves of *conium*, commonly called *cicuta*, and directed them to be sprinkled upon the poultice, and if they could not be obtained, I advised the use of a plaster of the extract of *conium*, and to continue the use of it as long as any hardness remained. I directed at the same time the internal use of the extract, beginning with small doses and gradually increasing until constitutional symptoms appeared. I am not able to give a detail of the progress of the cure, but I learnt that she followed my directions, and in the course of a few weeks was completely cured.

CASE II.—Mrs. K. of Greenfield, soon after delivery, was severely afflicted with milk abscess, which suppurated, and was opened several times. It was many weeks before the abscess healed. After it did heal, the whole of the breast became indurated, and as hard as stone. Various discutients were applied, such as mercurial ointment, camphorated liniment and spirit, &c &c. to no effect. I applied a plaster to her breast of the extract of *conium*, which she continued for several weeks, and recovered completely.

CASE III.—Mrs. G. of Sunderland, had borne several children. Soon after the first one was born, she had a severe milk abscess. She was not able to suckle her child any more from that breast. With each succeeding child she had abscesses in the breast, which became more and more severe. The indurations which succeeded remained from one pregnancy to another. At last obstinate sinuses followed, which were laid open in all directions; these were followed with very troublesome funguses, which discharged a great quantity of fetid sanious matter, and yielded to no remedies which had heretofore been administered. A celebrated surgeon who attended upon her repeatedly, told her that there was no other possible chance of saving her life, than by removing the breast by the knife. She was pale and emaciated, and evidently rapidly declining. She was unwilling to submit to the operation, and sent for me. I found her as above de-

scribed. I was inclined to believe that the surgeon was correct, and that the breast must be removed, but she was so anxious to try something else, that I consented to gratify her. I put her upon the use of the conium pill, and directed the use of the pond-lilly poultice, sprinkled with the powdered leaves of the conium. In a few days I saw her again. The matter discharged was much more bland, and less in quantity. It continued to decrease, and by the time that constitutional symptoms from the use of the pills manifested themselves, the sinuses were dried up. I then directed a plaster of the extract to her breast, which was worn till the indurations were completely removed. She recovered. She has since had children, but her breast has never troubled her any more.

CASE IV.—It is but justice to remark, that in a subsequent case I have used the conium without success. The case was, however, somewhat different. Mrs. S. of Conway, applied to me for advice in the winter of 1826. She was between forty and fifty years of age, and had ceased bearing children. She first noticed an induration in her breast a few months before. When I first saw it the whole breast was diseased, and of a stony hardness. It was much enlarged and puckered near the nipple. The skin was excoriated, and an ichorous matter was discharging from it. She had sharp, lancinating pains, and every indication of real cancer, attended with constitutional symptoms. It was my opinion that a resort to the knife was now too late. I directed the external and internal use of the conium, in which she persevered a long while without avail. A cancerous ulcer succeeded, which destroyed her in about nine months, which was the most rapid of any thing of the kind I had heretofore seen. This, and some other cases of cancer, forcibly reminded me of the lines of old TURNER, and likewise of the almost absolute necessity of immediate extirpation of all malignant scirrhusities of the breast.

“Is there a man you hate,
Or wish the hardest fate,
Bid neither plague nor pox,
Nor fam’d Pandora’s box,
Bid neither gout nor stone,
But, letting these alone,
If wretcheder you’ll make him,
Then bid the *cancer* take him.”

CASE V.—The following case promises a better result. Mrs. F. of Buckland, called upon my father and myself to consult us upon an affection of her breast, in the summer of 1827. She was between

forty and fifty years of age, and her youngest child was about four years old. She had been troubled with milk abscesses with her former children. When young, her breast had been injured, probably from pressure from the use of stays, a prolific source of cancer of the breast. The nipple was flattened, and she was never able to suckle from that breast. At the time we saw her the nipple was drawn in, and the breast around it was much puckered. It had been in that situation several months. The whole circumference of the areola was enlarged and tender. There had been an abscess under the lower part of the areola which had discharged, and still continued to discharge a small quantity of thin matter. The opening would scarcely admit the head of a small probe. It occasionally scabbed over. In the upper part of the breast there was a scirrhus tumour, of a stony hardness, about the size of a butternut. It hurt her to press upon it. She was of the nervous temperament, and had been taking medicine for some time. When we saw her, her physician pronounced, with a great deal of confidence, that it was a case of real cancer, and said nothing but the knife would effect a cure. We prescribed for her the external and internal use of the extract of conium, and a continuance of the blue pill, which she was then taking. I saw her a fortnight after; the swelling around the areola had subsided; the scirrhus had also diminished, and the soreness had left her. The matter discharged was of better consistence. Directed to continue the remedies. Saw her again in another fortnight; she was under the full influence of the conium. She said it made her drunk. Her breast appeared, in every respect, better, and there was every prospect that she would soon recover, and I afterwards learnt that she did recover.

CASE VI.—The following case shows that the conium has been successful in a case of *real open cancer*. In July, 1827, I took a short excursion upon our western mountains. On my journey I was requested by Dr. DEANE, of Colrain, to visit a patient of his, Mrs. S. who was troubled with an affection of the breast. She had been confined to her room several weeks. On opening the door I most sensibly perceived that most disagreeable smell which is so peculiarly and characteristically attendant upon open cancer. I examined her breast. There was an open, deep, ragged ulcer upon it, nearly the size of the palm of my hand. It was discharging a thin, ichorous, and highly offensive matter, in large quantities, and occasionally blood. It had somewhat the smell of old brass or copper when exposed to heat and moisture. The edges were jagged and callous, and

the whole breast was of a scirrhus hardness. It had been open several months, and there had been an induration in her breast several years. Her constitution was much affected, and she was confined to her room, and the principal part of the time to her bed. The pain in her breast was intolerably severe. The stench was so great in her room that her attendants could not bear to stay with her. At the time I saw her she was taking large doses of laudanum to alleviate her distress. As I had no expectation of curing her, I advised Dr. Deane, merely for palliatives, to wash the breast freely with salt and water, to make use of a carrot poultice, sprinkled with powdered conium, and after the stench was removed, to use the conium plaster, and at the same time to put her upon the internal use of extract of conium, until constitutional symptoms were induced. On the 12th of October, I saw Dr. Deane, who informed me to my great surprise, that Mrs. S. had completely recovered, and that her breast was entirely healed, and as smooth as his hand. The next summer I was called to visit a patient in Colrain, and called on Mrs. S. and found her perfectly well.

I have since used the conium externally and internally with complete success in the case of Mr. H. N. of Greenfield, who, for a number of months, had been affected with scrofulous indurations about the glands of his neck.

Deerfield, Mass. Sept. 1831.

ART. VII. *Reports of Cases treated at the Baltimore Alms-house Infirmary.* By THOMAS H. WRIGHT, Physician to the Institution.

CASE I.—*Vaginal tubercle.*—The following case presents a specimen, uncommon for its magnitude, of that form of morbid growth generally located at the outlets of the cavities, upon or near the meeting line of the mucous membrane and the common skin. A young woman, J. Griffin, about twenty years of age, represented to belong to the unhappy class of female profligates, was brought to the Baltimore Alms-house. The persons who delivered her to the charge of the institution gave no account of the cause, manner, or other circumstances of her illness. Its nature was inferred from her course of life, and on that presumption she had been placed in the syphilitic ward for females. On the day after admission the case came under examination, presenting the following signs. Form much wasted, face sallow and wan, deep hectic flush on both cheeks, eyes in-

jected, expression wild and frightened, lips dark red and parched, fauces inflamed, gums spongy and foul, tongue swollen, strong flesh-colour, surface dry, polished. Breathing was hurried, skin hot, pulse small, and past counting with precision. The intellect was disordered, perceptions confused, mind agitative, with a cast of delirious wandering in all the mental operations.

In addition to the symptoms noted, there was an odour from the person of the patient which revealed the existence of some local affection in the sphaceloid state. To inquiry respecting the condition of the external sexual organs, it was communicated by the nurse of the ward, that there existed something about the female parts of uncommon appearance, and in a very foul state. On inspection, a pyriform tumour of great size was observed; its larger extremity below, and suddenly contracted above into a neck or peduncle, connecting it with the left side of the vagina, which was dragged out or prolonged unnaturally by the weight of the pendant mass. The tumour was regular in form, of firm texture, occupied all the upper space between the thighs, and from its size and solidity was supposed to be from five to six pounds in weight. The general aspect of the mass gave the representation of a two-fold manner of development. A regular fibriform tumour seemed to have been first produced, and afterwards a dense crop of small tubercles of the verrucous kind, appeared to have sprouted from the surface of the primary body, and now completely and uniformly overspread it. These surface vegetations were about the size of a filbert, diminishing in bulk toward the root or neck of the tumour. They were round, coarsely granular on the exterior, and bore no small resemblance to our common blackberry in the unripe state. The lower extremity of this great mass, for about one-fourth of its whole length, was in the sphaceloid condition; smell putrescent, colour black red, cuticle desquamated, free sanious exudation, circular line of demarcation to sphacelus, dead structure somewhat shrivelled and collapsed.

By the copious issue of sanies with some hæmorrhage from the sphaceloid extremity of the tumour, the whole mass was blood-stained, so as to disguise its real character and cause it to appear as belonging to the tumours of fungoid constitution, for one species of which, (the cauliflower,) it was at first mistaken. Examination subsequent to the cleansing of the parts showed the whole appearance as above described, and corrected the erroneous opinion first formed. It was now evident that the tumour was a magnified specimen of that form of excrescence, which, under the denomination *verruca*, or warty tumours, infest the vestibulum of the female parts of genera-

tion. The present example of that kind of production was not only uncommon for its magnitude, but possessed characters of solidized organization, belonging rather to the fleshy tubercle than to the verrucæ proper. Its locality, its covering of coarse skin, and above all, its surface studded with hundreds of minor warty excrescences, pointed out its relation to that class of tumours, and in connexion with its size and solidity seemed to indicate in the present specimen a combination of the tubercle and the wart. The mass appeared abundantly vascular, as exhibited both by a tendency to somewhat free hæmorrhage, and the detection by pressure on the neck of the tumour of bold pulsation at several points.

The case was at first in no condition for immediate resort to operation. The serious exhaustion of the patient on admission rendered attention mainly and urgently necessary to the constitutional state. To tranquillize and sustain were the indications of the moment, to which removal of the local evil was a remote and secondary consideration; the morbid aspect of the tumour was the consequence, not the occasion, of intense constitutional disorder, developed from other and unknown causes. The tumour was directed to be enveloped in cloths charged with the spirit lotion, applied warm; the general means, small cordial anodynes, (spt. lav., ammoniæ, and tinct. opii,) in effervescing draughts, frequently exhibited until they produced their calming influence. These were aided by sponging with cool spirits the abdomen. Diet light and moderately cordial; rice-jelly, with small addition of wine.

In a few days the aspect of the case was sensibly bettered. Sleep had been procured; the tumult of mind and body was allayed; inclination for nourishment a little restored; strength somewhat revived. Advantage was taken of this state, to remove the now completely dead and offensive portion of the tumour. It was separated by a pair of large strong scissors—but the division was not easily effected, requiring much force and numerous cuts. The substance was tough and harsh, dividing like leather, or raw hide, in the macerated state.

On the decline of fever, and of the signs of gastro-intestinal irritation, the patient was put on the use of bark infusion with the mineral acid, and diet reinforced. Her improvement, seconded by a constitution naturally good, was constant and rapid. The remains of the tumour, still equal nearly in bulk to a small child's head, assumed the hue and actions of healthy structure; the point from which the dead portion was removed, partly by section, and in part by spontaneous separation, contracted, and was closing in by active

cicatrization. The tumour now presented the following character and connexions:—The mass external to the vestibulum, as before described, was a large oval body, solid, inelastic, and heavy, covered by an extra growth of innumerable small tumours, or tubercles, of the filbert size; colour of the tumour white, resembling common integument, only very coarse, or papular. The neck of the tumour was about two inches long, three broad, (from above downwards,) and one inch thick; its inner face, next the ostium vaginæ, was smooth, like the mucous membrane of that canal on the stretch; the external side like common skin. The labium majus of the left side, with its common covering, was on the outer side of the neck of the tumour; the nympha was distinguishable on the inner surface of the same part; the latter body very small, a transverse ridge merely, scarcely elevated above the plain of the surface. The root of the tumour thus appeared to protrude from between the labium and nympha of the left side, coming out betwixt the ramus pubis on one side, and the vaginal expansion on the other. The flattened, but thick root of the tumour, could be traced some extent up the left side of the vagina, covered by the wall of that canal, but its exact place of origin or termination above the ramus pubis could not be distinguished.

The whole mass was removed by operation, in one of the modes commonly employed for excision of such tumours. To prevent much loss of blood, as well as with the purpose of dividing the neck of the tumour as high as possible, a strong needle, armed with a coarse double ligature, was pushed through the centre of the root close upon the ramus pubis. The ligatures were tied above and below, pressing them well toward the base at the time of drawing the loop. The section was made with a scalpel, cutting across the neck just without the ligatures. Notwithstanding the means employed to obviate hæmorrhage, the dash of blood from the face of the cut was profuse; the ligatures did not effectually compress the portions included, and it was necessary to command the bleeding by firm pressure with the fingers against the ramus pubis within, until the vessels could be taken up. This part of the operation was tedious and difficult, in consequence of the alarm and struggles of the patient, and great retraction of the root of the tumour within the vestibulum. By the tenaculum and the needle, where the latter suited best, the hæmorrhage was controlled without immoderate loss of blood. There was but little inflammation or swelling after the operation. The young woman regained her health rapidly, and in six weeks was perfectly well; reported by the nurse of the ward to be without any thing unnatural about the parts from which the tumour had been removed.

CASE II.—*Glandular Tissue, Indurescence, Suppuration, and Excrescence of the Testicle, mistaken for Carcinoma.*—A young man, twenty-five years of age, wagoner by occupation, entered the Baltimore Alms-house with disease of the testicle, ensuing, by his report, to severe and neglected gonorrhœa. State of parts on admission: left testis enlarged to thrice its natural size, hard in places, inelastic, not tender to moderate pressure: surface of the gland rough and fibrous, as if traversed by numerous chords or thin bands; scrotum dark brown colour, contracted close around testis, at many points indented by union with the membranes and gland. From the whole front of the testis protruded a mass of the size of a pullet's egg, of coarse, granular substance, secreting profusely a mixture of sanies and pus. The base of the excrescence was broad and hard, its body elevated, flattened on the top—whole bulk exceeding the size of the testicle; scrotum around the base of the vegetation thick, adherent, and callous feeling. By pressure on the parts, a soft pulpy matter could be made to ooze out at some points where union of the scrotum to the base of the excrescence was incomplete. The funis of the left testicle was thick as a finger, knotted and hard: superficial lymphatics of both groins enlarged; cellular tissue, same seat condensed; inguinal glands swelled and tender to touch. Right testis retracted high, very little altered from natural state, except by adhesion of scrotum, vaginalis, &c. at a few points. Duration of the local disease now, by account of the patient, eleven weeks; parts had never been very painful; occasional sense of stinging and burning in the part—the chief unpleasant feeling.

The man represented the affection of his testicle to have commenced, (while he had gonorrhœa,) by general enlargement of the gland, followed by a dark red swelling on the front part, which slowly gathered, burst, discharged a reddish matter for some time, then large granulations shot out from the cavity of the abscess, and continued to grow and over-spread the gland, as they appeared at the time of his admission into the house. The parts had been constantly irritated by riding on horseback in his employment as teamster. The personal appearance and condition of the subject of this affection was strongly marked by signs of constitutional disorder. Form, naturally stout, was considerably emaciated; skin flaccid and sallow; face contracted, look desponding; tongue furred; appetite indifferent; bowels, laxative; distressed by flatulence; pulse small and quick; surface dry; sleep irregular and uncomfortable. By all the signs, local and constitutional, the disease of the testicle seemed to be represented as one of the malignant class of tumours, fungus hematodes, or medul-

lare. Operation in prospect was adverted to, as soon as by rest, regulated diet, and suitable alterative medicines, due preparation of the system was accomplished. The patient was put on the use of Plummer's pill reduced in strength, first with opium added for loose bowels, and free use of the diet drink; regimen, boiled milk, rice, and bread. The part was treated by simple fomentation and poultice.

The general circumstances of this case were so much mended after some time in hospital, (end of second week,) that the patient both looked and felt very sensibly better than when admitted; his complexion, spirits, appetite, and strength, were greatly improved. The local disease was not materially altered, otherwise than by greater cleanness, a better secretion, more puriform, from the ulcerous surface; better colour of the fungous growth, and less soreness of the parts, particularly of the inguinal indurations. These changes, slight as they were, taken in connexion with the obvious melioration in the general functions, under mere rest and simple treatment, seemed so strongly to contradict the presumption of malignancy in the disease of the part, that as soon as they were displayed in an unequivocal manner, I did not hesitate to recal the opinion first expressed, and to deprecate the contemplated resort to operation, as unwarranted by the present aspect and circumstances of the case. The local disease was now exhibited as essentially the result of irritable inflammation, aggravated constantly by manner of life, exposure, and neglect. It was noticed as probable, also, that the strumous diathesis was present, and concurred to complicate the affection, both by additional irritability in the habit, and the peculiar tendency it is known to impart, to conversions of textures not belonging to the common forms of inflammation. Hence the chronic induration of the tissues, partial, (tuberculoid,) suppurative degenerescence, and subsequent vegetative development in the part; hence too the manner and form of sympathetic irritation and change in the neighbouring lymphatic and cellular structures.

On this pathology of the affection it was conceived highly probable, that perseverance in the same general regimen, with the steady employment of caustic to the part, would accomplish enough to exclude occasion of resort to direct surgery. By maintaining a good state of the general system, and constantly repressing the products of morbid action in the part, the irritability on which that action was sustained would be extinguished, and a healthy process be set up for repair of the organization. Time realized this expectation. The fungus was touched over daily with the solid nitras argenti, and after-

wards wrapped in poultice. The application gave little pain, and did not excite inflammation. After a few days' use of the caustic, the bulk of the morbid growth was sensibly lessened; continued employment of it brought the tumour down to near the level of the skin, while the discharge from its surface became good, and the margin of scrotum around the base of excrescence softened, contracted, and was cicatrizing.—In a month the mass of vegetation from the testis was demolished, and the general health of the patient reëstablished. As the excrescence wasted, the enlargement of the body of the testicle was found to reduce in a gradual manner, and to resume something of its natural form; its irregular hardness and fibrous feel also diminished. The treatment by caustic was continued as long as any tendency to excrescence was apparent; the poultice was laid aside when the marks of inflammation were dissipated, substituted by dressings with ungt. oxyd. hyd. rub. The part finally cicatrized, leaving the body of gland enlarged in some degree, but without evident signs of disease. The secondary affection of the lymphatics, ganglions, and cellular tissue of the groins, subsided so as to be inconsiderable at the time the man left the hospital.

CASE III.—*Fibro-serous Tissue—Osseous Conversion.*—A man, sixty-five years old, school-teacher by profession, was admitted into the Baltimore Alms-house, on account of a scrotal tumour, which had become so inconvenient as to prevent continuance in his usual occupation. The patient betrayed marks of age beyond his time of life. Form thin, skin loose and shrivelled, hair perfectly blanched; in other respects reported himself to be pretty well, had not been sickly, was not conscious of any other disease than the scrotal enlargement for which he had come into the house. The commencement of the tumour was dated by himself five years back; origin spontaneous, or without any known cause.

On examination, the scrotum was developed to a size seldom attained in mature hydrocele, but the tumour differed in shape from common enlargement by vaginal dropsy. The development was almost wholly on the left of the raphé scroti; tumour of that side obtuse conoidal, the apex below; greater diameter near the exit of the chord from the ring. The covering of the tumour, the scrotum, instead of being thick, and somewhat rugous, as is common in hydrocele, was thin, smooth, and glistening. Its thinness was quite remarkable, being scarce equal in density to the skin on the back of the hand. This attenuated integument played freely over an enclosed body; the latter so firm as to yield scarcely at all to pressure, and that only in

places, there being parts or patches of the tumour so hard as to give no sense of sinking under compression; nothing of the elasticity which was distinguishable at other points or places. After much examination by the touch, the reflection of light, &c. the tumour was made out to be a hydrocele of unusual form, and with the peculiarity of the vaginal coat studded by patches of earthy conversion. The plates of calcareous matter in the vaginal cyst were numerous, hard, and smooth on the surface next the scrotum. On the right side of the scrotum existed another tumour of much less size than the one just described. This second tumour reached only half the length of that on the left side, was about the bulk, and had very much the form of a large hen's egg, was perfectly regular and smooth on the surface, with the investing scrotum adapted closely to it, and this integument very much attenuated, as in the case of the other, or left tumour. The body contained in the right side of the scrotum was heavy for its bulk, and every where hard and unyielding to pressure. While the large tumour of the left vaginal sac was irregularly hard, and sensibly compressible in places, (the elasticity of strong membrane tightly distended,) the smaller body of the right side was equally and positively resisting at all points, and wholly unalterable in form by any force which it was deemed allowable to use. The figure of this tumour, the equal surface over which the scrotum glided smoothly, and the feeling imparted to the hand while examining it, all forcibly suggested the resemblance of an egg enclosed in a covering of skin. The lower end of the body was something largest, smaller extremity presenting to the ring. The chord could be distinctly traced entering abruptly, or attached to, the upper end of the tumour, was thin, soft, and perfectly natural, to the point where it entered, or appeared to enter, the small end of the body embraced by the scrotum.

All the marks exhibited by the tumour of the right scrotum made it plain beyond doubt, that the tunica vaginalis testes of this side had undergone complete and universal calcareous conversion. The kind of resistance to the touch was wholly different from that quality of firmness, (often very great,) possessed by hydrocele when the sac is tense and the membrane thickened. In the case before us it was positive hardness, a form unchangeable in the smallest degree at any point, and a surface uniform and equal, inasmuch that the scrotum, (as before noticed,) moved over it as if having no connexion whatever with it, other than as a containing envelope. Neither of the tumours were in the least degree painful or tender to pressure, and had never caused inconvenience of any sort but by their size and weight. The space of chord which was free and pliant at the upper end of the

tumours, was sufficient for safe and convenient excision, and after due consideration, the operation, (by castration,) was judged advisable, and recommended. But when the patient understood that the relief offered him was no less than actual emasculation, his timidity, or his pride, took the alarm, and, under a privilege of going out for some purpose, he left the house, and did not return.

CASE IV.—Muscular Tissue—Calcareous Deposit.—Among the conversions to which the muscular tissue is liable, suppuration, indurascence, pulpy or lardaceous degeneration, &c. it has been doubted by pathologists of high authority, whether the muscular texture proper, was ever the seat of calcareous conversion, or submitted to that change commonly discriminated by the term ossification. The following case may be added to the scanty record on the affirmative side of this question, and appears to furnish, substantially, the kind of proof which the controversy calls for. Yet this case does not fill the vacancy of evidence on that part of the question which demands an instance of ossification in the muscular fibre, wholly primitive in the seat where it is found; originating in, and restricted to the muscular texture, and not produced or propagated to that organism, by extension or encroachment of the ossific process set up in other tissues, to which such a change is easy or common.

A man, about thirty years of age, was brought to the Baltimore Alms-house, January, 1831, in a state of low exhaustion, ensuing to the joint influence of long intemperance, and much exposure to the rigour of the season. The endeavours to sustain him proved ineffectual, and he died on the third day from his admission. In the examination of this patient when first brought into hospital, it was noticed that one of his legs was very much deformed by morbid enlargement, of irregular figure and singular hardness. There was extensive cicatrization on the leg, as if from former sores; but at this time the surface was no where ulcerated. After death the deformed leg became the subject of examination, and the hard enlargement, inequality, &c. of the limb, was then found to be caused by exostosis of the fibula in its whole extent. Two parallel spines, or ridges of super-ossification, were produced, from the edges of the fibula down its entire length; they were more than an inch deep, and spread outwards from their line of origin, so as to give the fibula the appearance of a long bony trough, wider at top than bottom. Between the anterior spine or ridge, and the tibia, and raised considerably above them both, appeared a bundle or tract of matter, distinct from both bones of the leg, but nearly as solid and bone-like as either in the greater

part of its extent. In places this interposed substance was made up of hard and soft matter intermingled, and at those points retained a good deal the colour, texture, &c. of muscular fibre, blended with much earthy matter. In other places, some inches in length, the structure of the part resembled an entire rough, bony body. Where the substance under consideration was least solidized, it was very much increased in bulk, forming at two or three points in the length of the leg, large knobs in a semi-converted state, thus showing the cause of the general increase of volume, as well as irregularity of form, noticed in the limb on first inspection of the case. This intermediate osseo-muscular structure was composed of all the muscles on the anterior aspect of the leg between the bones—the tibialis anticus, extensor proprius, pol. ped. extens., long. digit. ped. sc. all degenerated more or less completely into osseous matter, and fused into a complex mass.

Although it appears probable that super-ossification in the present instance was first set up by the periosteum of the fibula, and was propagated to the inter-osseous muscular tissue, yet the conversion of the muscles does not appear to have been accomplished by direct extension, or mere augmentation of earthy matter from the primary source of deposit. The semi-ossified mass of muscles was distinct and separable in its whole course from the bones of the leg, and by osseous development of the fibula inwards, had been pressed up so as to lie above them both. The stimulus or irritation to morbid secretion may have been imparted by similar action in the neighbouring tissues, but the earthy deposit amongst the muscular fibre seems to have been properly the work of its own vessels of nutrition.

CASE V.—*Vascular Tissue—Dilatation, Varix, &c.*—A middle-aged woman, long resident in the Baltimore Alms-house, and subject to epileptic attacks, presented the following abnormal developments in part of the vascular system. On the right half of the frontal bone appeared four distinct tumours, or prominences, of a soft, compressible character, and made up apparently of numerous cysts or cells communicating with each other, and thus composing one large pouch or sac—irregularly defined in its base, and lobulated on the surface. One great sac, larger than the rest, was placed near the outer angle of the eye; another occupied the midspace of the superciliary ridge, overhanging and continued upon the upper eyelid, a third stood on the top of the os frontis near the angle of junction with the right parietal, and a fourth was directly over the line of union of the internal

angular processes of the frontis. where they receive the ossa nasi, overlaying the latter bones, and deriving its covering in part from the skin of the nose. All those tumours, or pouches more properly, pulsated strongly in correspondence with the stroke at the wrist, and could all be flattened or emptied by pressure with the fingers.* The coverings of those pouches, the common skin of the parts, was thin and delicate, apparently much attenuated and weakened by distention. Besides the greater sacs already described, numerous small risings, size of large peas or beans, were dispersed over the temporal portion of the right frontal and parietal bone, and a few of the same kind before and behind the ear. These smaller tumours also kept time with the general pulse of circulation.

The state of the arteries on the opposite sides of the neck and head, in this case, was very palpably different. Those of the left side, the common carotid and temporal, &c. felt nearly as they are found under ordinary circumstances; there was, however, some departure, both in the size and action of those vessels, from a strictly natural or common state. Their volume was more developed to the touch, their action sharper, with a very perceptible thrill or jar in the stroke, of the kind denominated aneurismatic. It was in the arteries of the right side of the neck and head, however, that all those characters of faulty state and action were strongly displayed. The common carotid was here very sensibly enlarged; its undue size and overaction palpably evident, not only to the touch, but to sight; its action uncontrolled by pressure, and the current through it attended by a thrill so bold and distinct as to impart an unpleasant grating sensation to the fingers. This peculiarity of movement became greater as the vessel was traced toward its root, and was particularly strong in the innominatum. The dilatation of the common trunk of the artery was participated by all the branches of the external carotid. The occipital, in its tract along the base of the skull, was plainly visible in form and action, and felt scarcely less in size than the little finger. This vessel, as well as the front and middle branches of the temporal, gave distinctly the thrill so remarkable in the common carotid. The general circulation in this case was every where more vivid, marked by a higher tone of action in the heart and arteries, than is common in the female habit.

* The cysts could be depressed by the point of the fingers until something like incavation of the bone was perceived; represented by a hard, rough margin, corresponding to the outline or base edge of the tumours.

The patient's report respecting the duration of the tumours about the head, dated them back about three years; for which period also she had been subject to epileptic paroxysms. The latter had been renewed from that time at monthly intervals, more or less regular. Whether the fits of epilepsy anticipated, in point of time, the swellings on the head, was not clearly discriminated in her own recollection; she thought they had occurred much about the same time, but inclined to the opinion that she had suffered one or two attacks of epilepsy before the swellings on the head were observed. She represented herself to have been much subject to head-ache prior to occurrence of fits, or the local affection, and still suffered greatly from frequent and violent pain of the head. She complained likewise of almost constant annoyance, particularly of late, by a sense of fullness, with a peculiar irritation, in the membranes of the nostrils and palate.

The regular and strong pulsation of the whole group of tumours on the side and front head, their locality in the tract and at the terminations of the temporal artery, with the palpable enlargement and peculiar thrill in the carotid of the same side, all seemed to mark the case as one of arterial dilatation complicated with varix. The case was examined by many physicians and surgeons, who concurred in regarding it as a varicose affection of the arteries of the part, with probably something of the aneurism by anastomosis in the seat of the large pouches. The nature and tendency of the local developments, with their probable agency, if not in producing, in aggravating the epileptic concomitant, suggested a practical resort, which was deemed the proper corrective of the former, and likely at the same time to avert or mitigate the latter. Tying the common carotid was recommended as essential to the cure of the local disease, and affording a chance of arresting the epileptic paroxysms. Such a measure was also indicated by other considerations besides the prospect of relief, or the possibility of cure, it was supposed to offer. The tumours were manifestly on the increase, and the integument of those sacs already very thin, appeared too likely, at some moment, to give way suddenly, and in the absence of proper assistance, might bleed dangerously or fatally. This contingency was the more to be apprehended, inasmuch as the sacs were observed to be always greatly distended, and of deep colour, during the fits of epilepsy.

On the other hand there were considerations of a negative kind as to the success of an operation, which greatly abridged the ground of expectation or dependance on such a mean. Admitting the palpable

superaction, and the varicose state of the arteries on the right side of the head, as the possible origin of the epileptic phenomena, or if not the source of the affliction, by all probability a cause of exasperation, and an impediment to its cure, was it certain, or likely, that tying one, or even both carotids, would afford sensible, or permanent relief, in the true seat of irritation and embarrassment leading to epilepsy? Was the state of superaction and dilatation confined to the external carotid distribution? or was it not greatly to be suspected, that the internal carotid branches were also the subjects of preternatural action, and probable varix enlargement. If so, the vertebral anastomotics within the head were sufficient to supply all the congestive derangement required to sustain and perpetuate the epileptic contingency.

This patient had been almost two years in the house suffering attacks of epilepsy, at intervals seldom exceeding four weeks; her general health during the time was very much the same. The only medical regimen consisted in the practice of such depletion, by general bleeding, as the health of the common functions permitted, simple diet, and abstinence from laborious employment or undue exertion. But little change was visible in the state of the patient; the tumours on the head increased more by slow dilatation and thinning of their coverings, than by very obvious augmentation in their volume or extent. Attacks of epilepsy were renewed, with various force, in different paroxysms.

In July, 1830, the patient was attacked by what at first seemed one of her usual severe head-ache's, followed by epileptic invasion—but which, instead of passing off as before, by slow revival of consciousness, &c. glided into a train of symptoms resembling profound encephalitis. She became delirious for a time, soon lethargic, and fell into deep stupor, ending in death after twelve hours duration; third day after seizure.

For the purpose of tracing the vessels, and for preservation of the parts, as a morbid specimen, it was determined to fill the arteries of the head with the common injection. A pipe was fixed in the root of the aorta, the descending trunk and the subclavians closed by ligature, and the injection passed, until from the quantity thrown up, and the distended state of the superficial vessels, the arterial system of the head was supposed to be fully injected. Although the branches of the temporal artery were filled in all its ramifications, the main purpose of the injection had wholly failed; not a particle of the injection had entered the sacs on the head, with which the artery appear-

ed to communicate freely during life, imparting the fullness and pulsation they then possessed.* A few only of the smaller cysts in the tract of the middle temporal branch were raised up to the knotted form in which they appeared before death. The large pouches at the angle of the eye, on the orbital ridge, the top of the os frontis, and over the naso-frontal junction, were flat and empty. The total failure by the injection could only be explained on the presumption, either that the communication of the temporal branches with the cysts on the forehead had been by very small channels, which became obstructed by coagula after death, or else that the great pouches had not received their fullness and pulsation directly from the temporal branches, as was supposed. The latter conclusion appeared most probable, and at the same time pointed to the *veins* as the route of communication with the now empty cysts. This conjecture was realized on trial. When a pipe was fixed in the superficial cervical, the trunk of the facial or angular, in the neck, and the injection pushed on, in a moment every sac was swelled out to the size and shape presented in life. All the cysts were filled, the pristine form accurately developed, and the external resemblance to the living state completely restored. The whole character of the local affection now appeared to be changed. Instead of a specimen of arterial varix, or anastomotic aneurism, for one of which, (or rather a compound of both,) the case had passed with all examiners, injection appeared to have revealed an example of morbid dilatation in the venous system, anomalous by the fact of immense varicose development in the capillary series, the venous radicles of that system. It proved afterwards that the case was of complicate character; and that while the more prominent forms of vascular tumour were really in a part of the venous capillaries, the arterial series of the head had participated largely in the process, both of general and special dilatation. Definite arterial enlargement, (varix,) was as plainly marked, and scarcely less matured, in parts of the carotid distribution, as the venous varices just described. Arterial and venous developments were equipondant.

The tumours on the forehead as now reformed by the matter of injection, were about the size of walnuts, and appeared to be made up

* It ought to have been mentioned, in describing the cysts, that deep and strong pressure on the right carotid constantly subdued the pulsation in them, to a great degree, and when the pressure was forcible enough to shut the artery in the neck, it extinguished all movement in the sacs, though they still remained full.

by dilatation and anastomosis of the deepest subcutaneous veins; for above each tumour was spread a dense plexus of small veins, finely injected, and overlaying the tumours as a vascular arch or web. The large tumours were closely applied to the cranium, and so firmly attached in their place as to seem imbedded in the bone within the area of their base. In some of them this was found to be the fact: by pushing a common pin obliquely through the margin of the tumours, it penetrated the outer table of the cranium with great ease—the resistance by the bone not exceeding that of a piece of dried bladder; part of the cysts containing the wax were evidently inserted into the cranium as deep as the middle structure, lattice-work, of the skull. The rough and incavated feel of the bone within the limits of those tumours, which was discriminated by pressure during life, was thus explained.

The arteries of the opposite sides of the head were in a very different state. Those of the neck were enlarged on both sides, but the common trunk of the right much more voluminous than its fellow of the left.* The most palpable inequality of size, however, in the two sets of vessels, was found in the branches of the external carotids. The right superior thyroid was as large as a crow-quill, and though the sublingual and facial were under natural size, the occipital again rather exceeded the ordinary volume of the common carotid. The temporal was more than twice the size of the same vessel on the left side, and the branches of the former exceeded those of the latter, in the same ratio, (twofold,) both in number and size: the whole right side of the head, in fact, was overspread by a coarse web of large tortuous vessels, connected by frequent anastomoses. In only one point on the surface of the head did the present state of the arteries realize the idea which had been formed of their condition during life. About the middle of the posterior temporal branch, was a tumour or knob, the size of a small marble, formed by the abrupt dilatation of the lumen of the artery, now filled up and defined by the matter of injection. This was a solitary exhibition of true arterial varix in the set of arteries which had been supposed to betray numerous and large varicose developments. The actual state, then, of the external arteries of the right side of the head was nearly universal dilatation, but that change general and equal, (proportionate,) every where, with one point only of extra or special enlargement.

* The right carotid, one inch above the innominatum, measured one inch and five-eighths in circumference; the left, at the same point in the neck, one inch and one-eighth.

It appeared probable that the process of dilatation was not confined to the external arteries of the right half of the head. When, by removing the globes from the orbits, the ophthalmics came into view, the relative difference of size was as remarkable in them as in the superficial vessels of the two sides: the right ophthalmic was more than twice as large as the left. On examination of the vessels within the head, it was found that the morbid development was proportionally much greater in the cerebral arteries than in those of the cranium. Both the carotid and vertebral members of the great basilar circle were astonishingly enlarged. The communicans of the right side was equal to an ordinary little finger, and bulbous in three places; a knob near the carotid root of this trunk was as large as a musket-ball. The basilaris was rather more than an inch in circumference, and the right vertebral, immediately on rising up to meet its fellow, swelled out into a pouch, which, filled by the injection, was larger than any other of the tumours or knobs in the basilar series. The left communicans was enlarged, but much less so than the right, and it also exhibited points of particular or definite increment of the saccular form. Thus the arteries of the basis cerebri, besides being generally increased in size, were also eminently varicose at many points: the whole circle, and its principal branches, were singularly tortuous, anastomotic, and knotted.

The condition of the arteries of the brain confirmed the surmise about their state which, during the life of the patient, had been urged against the probability of benefit by operating on the right carotid. The extent and relations of the vascular dilatations within the head, rendered it plain that the morbid excitement, or congestions to which they were instrumental, were unsusceptible of counteraction by any means short of total interception of all the channels by the neck. Both the carotid and vertebral members of the basilar circle were dilated and varicose, and every where accessible to the current coming in at any point of the circuit. Whether the relative greater advance in change of capacity in the arteries within the head, than in those of the external carotid system, is to be taken as proof of prior departure from the normal state by the former, can only be conjectural: neither would the settlement of that question determine whether the epileptic state of the patient was the cause or the consequence of degeneration in either set of vessels. The time of origin of such change in the cerebral arteries would remain indeterminate, and the patient herself never was able to realize whether the fits preceded the tumours on the head, or followed their appearance: she supposed them to have taken place much about the same time.

The tone of vascular action in this case had been found habitually above the par of natural excitement. The pulse was always sharper, harder, and more frequent than is common in health; there was also a perceptible thrill of the aneurismatic kind to be felt in all the principal trunks, even of the limbs. The entonic character of action had become constitutional, and was participated by the vascular series every where, and that habit, the usual forerunner of change of capacity, was marked by its common results. The action of dilatation was traceable in most of the greater channels of distribution; but it was in the right carotid, and its branches, that superaction and dilatation were prominently displayed. For this speciality of morbid action and change it is difficult to find an explanation. Enlargement was regular, uniform, and proportionate through the series, from the root in the innominatum to the terminal branches, yet the arterial tissue seemed every where natural—no form of disease or decay in the texture of the coats.

Another phenomenon presented by this case is of difficult solution. It is interesting to know the cause of pulsation so distinct and constant in the sacculated extremities of the facial or angular veins, the superficial veins of the forehead. Was the pulsation at the points in question the effect of successive impulses commencing at the heart, whose momentum was propagated reversely through the descending blood, or the result of a plethoric state of the whole venous system of the head, produced and maintained by habitual overaction of the heart and cephalic arteries? The more distinct statement of those questions would be, first, whether from excessive action of the heart, the ventricles particularly, the return blood of the head was in some degree checked or intercepted at the right auricle, and by the same forcible contractions a successive movement of repercussion or undulation was imparted to the column of fluid resting there, sufficient to be sensible or to give pulsation in the extreme vessels. If pulsation in the primary veins could be thus renewed in accordance with successive reaction, or a certain momentum thrown back by the ventricles, then the operation of the same power would serve to explain the primary change of condition, or the abnormal developments which those vessels had undergone at their extremities. That strong excitement or overaction of the heart may cause a degree of sensible repercussion in the descending venous series, appears to be established, if the statements are credible which we have on respectable authority, viz. that in high irritation of that organ all the superficial veins of the neck have been found beating visibly and palpably in concert with

the pulse. (Hall on Vascular Irritation.) The second branch of this question, is whether continued overaction of the heart and arteries was capable of producing a plethoric state of the brain, with such remora in the sinuses and venous system of the head, internal and external, as would occasion the momentum of the blood entering by the arteries to be communicated to the whole mass of fluid delayed in its return, and thus to fall with a special shock on the extreme veins. If the brain be incompressible, its venous system engorged, and the arteries of the head in full, or superaction, as the blood enters with pulsation, the stroke, in the given state of the veins and sinuses, must be every where imparted to the fluid of that system, giving a correspondent movement or successive undulation, terminating at the venous roots or origins. The sinuses, by their capacity, figure, and defence from strong membranes, are best fitted to resist impulsion of their contents, and thus to direct it toward the extreme branches. Now, a shock of this kind, scarcely palpable among the minute and subdivided terminal series in their normal state, might become very sensible, if at any point or points, by dilatation and anastomosis, many of these radicles came to terminate in one or more cysts. Something analogous obtains in *nævi materni*; the action of the small vessels of which those tumours are composed, would not be discriminated by the touch in their natural state, yet by some enlargement, and free communication in common receptacles or cells, pulsation becomes strongly revealed.

CASE VI.—*Amputation—Venous Hemorrhage*.—A man was received into the Baltimore Alms-house, October, 1830, with chronic inflammation, swelling, and suppuration of the left knee-joint. The local affection resisted all treatment, topical and general, a deep sloughy fistula, communicating with the articular cavity, opened above the inner hamstring; symptomatic fever was urgent and unremitting, diarrhoea supervened, and the patient fell rapidly toward a crisis of perilous lowness. In this state of things amputation was the only resort. The limb was separated as low down as the condition of parts permitted. The weakness of the patient rendered it important to save his blood as much as possible, so that after dividing the bone, every artery was sought for and tied before the tourniquet was relaxed. When, after securing all the arteries that could be found, the tourniquet was loosed sufficient to show pulsation at the loops of the ligatures, not a single artery was sprung, nor a jet of florid blood visible, but a sudden gush of black blood from the great vein, rendered it necessary instantly to draw the tourniquet close.

An attempt was then made to discover whether such compression as the stump might bear in dressing would be sufficient to command the flow through the vein. For this purpose the soft parts were comprehended in both hands, and very firmly braced around the bone, after which the tourniquet was again cautiously loosed. The moment the ligature on the artery was observed to feel the returning current, the blood of the vein spouted in full stream to the distance of four or five inches from the face of the stump, unchecked by the closest grasp which could be made by the hands. It was now evident that ligature of the vein was indispensable. Its extremity was carefully insulated from every thing around, drawn out and tied. On now loosening the tourniquet, it was found that the hæmorrhagic disposition was assumed by all the secondary veins. Not one, but eight or ten streams of venous blood were projected to the distance of four or five inches, and in defiance of all compression, short of the tourniquet, continued to maintain their full projectile currents. Aware that *partial* compression by the band around the limb favours venous hæmorrhage, the tourniquet was thrown for a moment completely free, the limb raised vertically, and firmly grasped around the stump. Nothing was gained; the rush from the veins was undiminished and continuous, precisely as from arteries. It finally became necessary to apply ligatures to every vein of any size in the stump. In this manner eleven veins were tied up. We were for many days far from unconcerned about the possible consequences of the measure to which we had been forced, but the case went on without a single bad symptom which we could refer to the ligature of the veins. Owing to great exhaustion of the patient by symptomatic fever and diarrhœa contracted prior to operation, the parts about the stump did not cohere well, and a gleety suppuration for some time kept the wound open—indisposed to heal, and finally involved exfoliation from the end of the bone; but there was at no time signs of phlebitis, local irritation, or constitutional disorder, in any manner different from what might have happened had no vein been tied.

This was the first occasion among numerous amputations in which I had found it necessary to treat veins as arteries, and, notwithstanding the apparent harmlessness of the practice in this instance, would never stop veins by ligature where it was possible to avoid their employment.

Baltimore, August, 1831.

ART. VIII. *Case of Traumatic Tetanus, successfully treated.* By
ANTRIM FOULKE, M. D. of Montgomery County, Penn.

To the Editor of the American Journal of the Medical Sciences.

DEAR SIR,

My friend, Dr. Antrim Foulke, a most respectable and excellent physician, of Montgomery County, has communicated to me the particulars of a very interesting case of tetanus, which I saw with him during the convalescence of the patient, and which, from the circumstance of tetanus, from a wound, being very seldom cured, deserves to be recorded. You will oblige me by inserting it in the Journal.

Truly yours,

W. GIBSON.

Noah Snyder, aged twenty-four years, a robust and muscular man, of a sanguine temperament, on the 25th of July last received a wound in his leg from a cradling scythe, by which the posterior tibial artery was divided. The hæmorrhage was profuse and obstinate, but ultimately yielded to compression; and notwithstanding the prostration, which was in the first instance alarming, the patient did well, the wound healed kindly, and no untoward symptom appeared until August the 17th, when he was seized with unequivocal symptoms of tetanus, the spasms commencing in the injured extremity, and proceeding along the whole course of the spine and neck, producing a complete incurvation of the body. The jaws, though not entirely closed, were so rigid as barely to admit the introduction of a tea-spoon. The contortions of his face were truly horrible, and deglutition and articulation were effected with great difficulty.

I immediately administered a large tea-spoonful of laudanum, had the dressings removed from the wound, and ol. terebinth. applied, and frictions of the same to his spine. Opium, in combination with camphor, was given in large doses at short intervals during the night, which, together with the free administration of brandy, produced towards morning a considerable abatement in the violence of the spasms, and a state of comparative tranquillity. The medicines were continued, but in smaller doses, and at longer intervals. Towards the evening of this day, as the spasms recurred with their wonted violence and frequency, the same remedies which had been used the preceding evening were resorted to, and with a similar effect. He was then left under the almost uninterrupted influence of stimuli for the three succeeding days, but the spasms, though they at no period

during that time attained the same general and alarming violence, still continued to recur at longer or shorter intervals.

Finding that nothing had been, or seemed likely to be, effected by the stimulants alone, and dreading the state of exhaustion and collapse which such powerful and long-continued excitement must superinduce, I resolved to endeavour to break up the chain of morbid action, by making a new constitutional impression. Accordingly, on the fifth day from the first attack of the disease. I commenced giving him calomel, in conjunction with the remedies previously used, and continued it until a complete ptyalism was produced. This was not at first attended with any very manifest amendment of the symptoms, but in a few days, though the spasms continued to excite uneasiness and alarm, they were much reduced in violence. and were, for the most part, confined to the injured extremity. The patient continued in this situation for several days, when I commenced giving him as-sa-fœtida in substance, and in large quantities, which was promptly and unequivocally beneficial, for in four days from its first exhibition the disease was entirely removed.

Although I believe the most active and vigorous use of stimulants to have been entirely indispensable, as auxiliaries in the treatment of this case, yet I am persuaded that the breaking up of the morbid condition is clearly attributable to the agency of the mercury. The prompt and effectual influence of the as-sa-fœtida, in the latter stages of this case, leads me to entertain a high opinion of its antispasmodic virtues when administered in very large doses.

Montgomery County, Pa. Sept. 1831.

ART. IX. *Observations on the Modus Medendi of Emetics.* By
ROBERT J. TURNBULL, M. D. of Charleston, S. C.

WE do not seriously indulge the hope, that there is much on the subject of emetics possessing the charm of novelty which has hitherto escaped the research of the profession. The extent of our present design, is rather to revive certain principles connected with the operation of emetics upon the human system, which, though acknowledged by all as among the most fundamental of the healing art, are too often lost sight of by the regular routine practitioner—together with certain deviations from the ordinary mode of reasoning on this class of medicines, which, if possessed of no other merit, will at least be entitled to the claim of originality.

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We cannot, however, but flatter ourselves, that a more extended view of the phenomena which evince themselves upon the exhibition of emetic substances, will conduce much to arrest the progress of diseases of associated action, which ought, and can only be counteracted by agents of equally associated effects upon the system. Fever, a disease universal in its operation upon the system, implicating every organ, every tissue, and every system of vessels, is only to be subdued by remedial agents equally universal in their effects; and in searching the *materia medica* for a class of medicines capable of accomplishing these indications, none presents such claims to our consideration as the various emetic substances, distributed through the vegetable and animal kingdoms. In combating fevers successfully, the practitioner must pass over the less important and *primary* action of emetics, to wit, the ejection of the vitiated contents of the stomach, and base all his hopes of success upon those *secondary* effects upon the system, brought about by the depressed condition of the heart and arteries, dependant upon that inexplicable bond of union between distant parts of the system, denominated *sympathy*, and by which depressed condition of the circulatory organs we effectually controul inordinate action in any and every part, whether manifested in the form of simple excitement, or intense inflammatory action.

However, to one conversant with the high encomiums passed upon this class of medicines by the various authorities of the *materia medica*, it cannot but be evident that the practice of the present day is not based upon those salutary principles, viz. the *secondary action* of emetics, which characterized the practice of the practitioners of the past generation—that a revolution has obtained in the therapeutics of disease which has substituted a mode of treatment widely differing from that of our predecessors—and that the secondary effects of emetics have not only been lost sight of, but that the class of cathartic medicines have in a great measure superseded the use of emetics. It is not, however, a little singular, that the practice and theory of the day should be at variance. While our text-books teem with recitals of the wholesome and salutary effects of emetics, acknowledge their varied and extensive operation on the system, justly commend them as primary agents in combating the numerous diseases “that flesh is heir to;” still, by a strange inconsistency, they are much neglected, not unfrequently condemned on account of some hypothetical consideration, and when prescribed, it is usually with views so limited, as in a great measure to render them, if not nugatory, certainly of extremely limited advantage.

Though the writers of the *materia medica* have ably portrayed the *primary* and *secondary effects* of emetic substances when acting upon the human system, he who has concentrated his observation upon the practice of the profession relative to the employment of emetics, will readily perceive the necessity of conceding, that they have in a great number of diseases been rejected as dangerous, and even when acknowledged as legitimate resources of the art, have, in a majority of cases, been resorted to with the most limited views, simply prescribed as an evacuant of a stomach morbidly oppressed with accumulated ingesta or vitiated secretions. at once losing sight of those various *secondary phenomena* which invariably supervene upon the introduction of emetic substances into the stomach. Such is the extent of sympathy which exists between this organ and all other parts of the animal machine, that this viscus has, with no less propriety than beauty of expression, been termed the *centre of sympathies*. To attempt fully to trace the causes of this bond of union between the remotest parts of the system, might be involving ourselves in a labyrinth of *cause* and *effect* too intricate to engage the attention at present; suffice it, that we now only advance a theory, which, though deemed inadequate to explain this singular and extensive connexion of the various remote parts of the system, may be a mean of leading other minds to a more thorough investigation of a fact thus far deeply involved in obscurity.

In treating this subject we shall divide the numerous sympathies which manifest themselves, into *direct*, and *indirect*. *Direct sympathy* is that which exists between the *heart* and *stomach*, and we shall denominate it the *gastro-cardiac sympathy*.

To give any plausible conjecture of this connexion between these two important organs—the centres of the circulatory and digestive systems, it will be necessary to resort to another fact, which, though somewhat hypothetical, nevertheless carries with it so much probability, that we think it will be conceded by all.

We would maintain, that every organ, for the performance of its healthy functions, is dependent upon the *brain* for a certain portion of nervous fluid, *vis nervea*, by virtue of which it performs its ordinary functions.

It is well known, that inordinate muscular action, to accomplish which the muscles must be constantly supplied with nervous energy, greatly impedes the digestive process. Great mental exertion, by withholding that *vis nervea*, which is essential to the various organs for the performance of their respective functions,

and concentrating it for purposes of great mental action, necessarily impairs these organs, thus robbed of their due proportion of this essential fluid. Great mental emotion, such as grief, fear, joy, all exert an injurious tendency upon the other organs of the system, by concentrating this fluid in the brain. To this abstraction of the *vis nervæ* by the cerebral mass from the other viscera, may be referred the whole catalogue of diseases incident to persons of sedentary habits. The stomach, and in short, the whole digestive apparatus being thus extraordinarily robbed of its *primum mobile*, viz. the *vis nervæ*, is still called upon to perform its ordinary avocations in the ordinary manner; that it should not promptly respond to this unreasonable demand, is not singular; that it should consequently perform its functions in an irregular manner, first, by functional derangement of the *primæ viæ*, as evinced by acidity, flatulence, cardialgia, &c. and after by chronic, gastric and hepatic inflammation, is the natural consequence of the abstraction of this fluid; thus clearly proving that the health of the individual ultimately depends upon a regular and just distribution of nervous energy to the various organs of the body.

Now, by a resort to the old and just maxim of “ubi irritatio, ibi fluxus,” may we at once give some plausible conjecture as to the various phenomena which are manifested in the circulatory system, when an emetic substance is presented to the stomach. By an acknowledged law of the animal economy, every organ is endowed with the power of instituting certain processes, tending to avert any causes which threaten the interruption of the performance of its functions. The sensitive fibres of the iris immediately contracts to protect the delicate retina from an intense light, which by over-stimulation would produce organic derangement in this delicate tissue. The intestines, by virtue of the same sanative principle inherent in them, by an increased peristaltic action hurry along the tract of the alimentary canal any substance incompatible with its ordinary and healthy action, and thus it is that the stomach when oppressed by the presence of an emetic substance, would appear, when about to collect its energies, to call upon the neighbouring organs to lend their aid for the ejection of the offending matters. By the immediate response of the various organs, there is concentrated in this viscus an unusual degree of nervous power, to the abstraction of it from every other part of the system. The heart, thus deprived of its ordinary quantity of nervous energy, and feeling the want of that portion which has been determined to the emetic oppressed stomach, necessarily performs its functions in an enfeebled manner, and a corresponding en-

feeble systole and diastole is the result, as evinced by the paleness of the countenance, indicative of diminished action in the capillary vessels of the face, and as rendered more evident by an examination of the circulatory system, through the medium of a soft, feeble, or frequent pulse, &c. which facts we think unequivocally establish the existence of that *direct* sympathy between the stomach and heart, which we above termed the *gastro-cardiac sympathy*. And it is by the intervention of this *one direct sympathy*, that we account for all those phenomena which are presented to our observation under the term sympathies; numerous indeed, by virtue of that unlimited connexion which exists between the heart and every part of the animal machine. As there is no organ whose inmost recesses are not momentarily subjected to the vivifying influence of the contents of the heart and arteries, it will be apparent to the most casual observer, that in the exact ratio that we can controul the action of these, we shall produce corresponding changes in every portion of the system; and thus do we illustrate those various phenomena which have obtained the various appellations of gastro-cutaneous, gastro-cerebral, gastro-hepatic, and gastro-pulmonic sympathies, as also innumerable others, which might be multiplied *ad infinitum*—certainly to as many as there are parts in the animal machine. They might justly be enumerated from the most important organs to the *ultimate fibre* which enters into the most delicate structure. To enumerate the most conspicuous of these, will, we feel assured, be productive of giving liberal and salutary views in the exhibition of emetics, which cannot fail to render our practice more successful, and, at the same time, confirm the confidence which our *text books* repose in this valuable class of medicines.

In pursuing our inquiries relative to *indirect sympathy*, the first that presents itself to our consideration is that which exists between the stomach and brain, under the title of the gastro-cerebral sympathy. This connexion between these important organs is made apparent to our senses by the syncope which supervenes upon extreme nausea, dependant upon an enfeebled, or perhaps a *suspension* of the capillary circulation within the cerebral mass, and this again dependant and enfeebled action of the heart, enfeebled by an undue determination of nervous fluid to the emetic oppressed stomach. It ought here to be remarked that these sympathies are reciprocal, the stomach being as often affected by impressions made upon the brain and the nerves derived from thence; the infliction of a blow upon the cranium, certain impressions made upon the olfactory nerves by dis-

agreeable odours, the abstraction of blood, all exert an influence upon the stomach.

Ever to have an attentive eye to this sympathetic connexion cannot but conduce highly to our success, when called to encounter inflammation in this important organ, whether proceeding from disorganization of its substance or its delicate meninges, or whether the result of simple excitement dependant upon increased vascular action. To controul inordinate action in this important organ, the earliest resort should be made to the use of emetics, after a copious evacuation of the circulatory system by the lancet, thus maintaining the advantage derived from the use of this instrument without further debilitating the patient by copious and repeated draughts upon the vital fluid.

Of the existence of many other sympathies between the stomach and other organs, there exists most ample testimony. These have received appellations indicative of the various organs which they connect, as for instance, the *gastro-renal*, the *utero-gastric*, the *cysto-gastric*, &c. all evincing themselves under certain circumstances, such as the irritation dependant upon urinary calculi in the bladder or ureters, the uterine contents during the period of gestation, the accumulation of urine in the bladder, all of which exert an influence over the stomach, inducing all the symptoms of gastric irritation, varying from the slightest nausea to the fullest vomition.

After having thus pointed out the *universal sympathy* which exists between the stomach and every other part of the system, may we not ask what organ is diseased, in which symptoms of *preternatural action* are manifested, and emetics not imperiously demanded? If, as pathologists teach, *inflammation is seated in the capillary system of vessels*, then are emetics, by virtue of their peculiar sedative action upon these vessels, controlling both the velocity and quantity of the circulating mass within them, one of our most powerful antiphlogistic agents. The heart no sooner perceives that a portion of its ordinary nervous energy has been abstracted, than enfeebled systole supervenes. An enfeebled contraction of this organ necessarily involves the supposition of diminished action of the whole arterial system; those recesses which are most remote from the centre of the circulation first feel the absence of its ordinary stimulus, and diminished action in these parts. before preternaturally excited, is the consequence.

That such diminished action of the *capillary system* of the *internal* organs does take place, we infer from the phenomena presented to us by those which are *external*. The pale and shrivelled countenance,

dependant upon diminished action of the capillary vessels of the face, occurring synchronously, and even before the supervention of nausea, forcibly teaches us that an analogous condition must obtain throughout the system, in the internal as well as the external organs.

Of the sedative effects of emetics upon the capillary system, there exists other testimony than our own observations. Experimentalists have ascertained, that in the exact ratio of the emetic substance being urged upon the stomach, is the degree of the diminished action extended; retrograding from the capillary system to the next sized set of vessels, and again to those of a still larger diameter, until eventually in the smaller animals it has extended itself by this retrograde movement to the heart itself, whose action it has eventually extinguished.

Thus deprived of the vivifying influence of the blood and with it a certain portion of the *vis nervea*, which gives to the diseased organ a morbidly tonic condition, a universal relaxation pervades the system, eliciting the organs thus affected to pour out their locked up secretions.

Such then are the additional views, which ought to occupy the mind of the physician when prescribing emetic substances. In all diseases of associated action, it is to their effects upon those organs embraced in the term *secundæ viæ*, that we must look for success. In the *idiopathic pyrexia*, by virtue of their universal relaxant property, they become one of our chief agents in arresting the progress of this class of diseases. In fever, dependant upon inflammation, or some other irregularity of the capillary system of vessels, which may be said to constitute the parenchyma of an organ: the exhibition of an emetic stands second only to the use of the lancet. As there cannot exist great local determination, without a corresponding accumulation of nervous energy in a part, the beneficial effect of an emetic will be strikingly observable in the fact, that having diminished the quantity of vital fluid circulating within the part, an abstraction of a portion of the morbidly accumulated *vis nervea* is the result, and relief from local pain is a further consequence.

When thus dwelling upon the *secondary action* of emetics, we would not wish to have it understood that we in any degree wish to invalidate the confidence which is justly reposed in this valuable class of medicines, even when prescribed with a view to their *primary action* upon the system, viz. for the ejection of accumulated ingestion or vitiated secretions, preparatory to the exhibition of other medicines, designed to operate upon the alimentary canal. Such preparation being sometimes absolutely necessary, owing to a preternatural irri-

tability of the stomach. The advantages of relieving a stomach thus oppressed, are too evident to require comment here. None feel the advantages to be derived from the *primary action* of emetics upon the alimentary canal and collatitious viscera, more than ourselves.

As cathartic agents, this class of medicines present urgent claims upon the attention of the profession. They exert a twofold operation upon the system. Independent of their stimulant operation upon the alimentary tube, producing copious discharges of feculent matter, highly coloured with the hepatic secretion, first *elicited* by the universal relaxation of the system, and after *extorted* from the liver by the combined pressure of the diaphragm and abdominal muscles, during the act of vomiting. A portion of this bile, escaping into the duodenum, and thus being out of the reach of the inverted action of the stomach, passes through the whole tract of the alimentary canal producing its peculiar cathartic action. Independent of this highly remedial operation upon the alimentary canal and collatitious viscera, antimonials managed as cathartics, presents other and higher claims to the consideration of the profession, which ought to give them a decided preference when prescribed in febrile diseases. We again allude to their *secondary operation* upon the system, to wit. their *control of the action of the heart and arteries*; this while it effects the primary object of alvine evacuation, subdues inordinate action in every part; whether it be in the encephalon, as evinced by head-ache, intolerance of light, or in the suffused and muddy appearance of the eyes; whether in the pulmonary organs, as declared by cough, stricture, or limited respiration; whether the inflammation be seated in the parenchyma of the liver or in the serous tissues investing it; in short, by virtue of diminished cardiac, arterial, and consequent venous action, in whatever part of the system, however remote, or inordinate it may exist, it cannot fail immediately to experience the sedative effects of antimonial emetics, administered with the double view of producing their emetic and cathartic operation.

We shall now cursorily glance at one or two diseases, in which emetics may be administered with great advantage, but more especially with a view to their *modus medendi* in these complaints.

If, as we believe, dropsy be dependant more frequently upon *inordinate capillary action*, resulting in the deposit of serous secretion, rather than upon diminished action of the absorbent system of vessels, then would our views of controlling the circulation within these vessels, through the medium of the gastro-cardiac sympathy, prove most applicable. The exhibition of emetics in this disease, will, however, much depend upon the condition of the pulse. As desirous as we

are for a more general use of antimonial, upon more extensive views, we cannot subscribe to the position that, as they *promote absorption*, that they are therefore appropriate in all forms of this complaint. It is only in those cases in which there is observable an acceleration of pulse, not amounting to fever, that we deem them admissible. In a contrary condition of the arterial system, as when the disease supervenes upon old and worn out constitutions, as indicated by a feeble and frequent pulse, it is evident that an emetic cannot otherwise than depress a system, already requiring artificial support. It is not necessary that this excitement be manifested by the pulse. *Inordinate capillary arterial action and consequent serous effusion* may exist without involving the circulation in the larger system of vessels.

These opinions have been adopted, because we think that observation has taught us that the absorption and discharge of the fluid collected in the peritoneal cavity, is never effected until such time as the hydragogue medicines resorted to, have, by their evacuant operation, subdued that *excited* condition of the pulse, upon which the disease, in a majority of cases, essentially depends. By the profuse serous evacuations, and a consequent diminution of the circulating mass within the *exhalent arteries* of the intestines, a revulsion is produced, and the tide of the circulation is reversed. Instead of a preternatural afflux to the capillaries of the peritoneum, it now flows to the capillaries of the mucous membrane of the intestines, which in obedience to the stimulant operation of medicine, pour out their serous contents, thus substituting an artificial excitement of the capillaries of a mucous, for the more dangerous inflammatory condition of those of a serous membrane. Such, do we believe, is the *modus medendi* of ordinary hydragogues. To their evacuant or depleting powers, do we attribute the beneficial results consequent upon their exhibition.

If the above reasoning be correct, we feel confident that an antimonial cathartic would be decidedly preferable to all other cathartics, by virtue of its twofold operation upon the system. It promises to answer the double indication of producing revulsion of the circulation, by the profuse serous evacuations which are consequent to its exhibition, as also to controul the circulation within the peritoneal capillaries by virtue of its *sedative* action upon the *heart and arteries*, thus obviating that condition in this system of vessels, upon which we have supposed the serous deposit to depend. To this artificial inequilibrium of the circulation of the arterial and absorbent systems, brought about by the diminished action of the former, do we refer the *apparent direct* stimulant effects of the latter. Emetics do not

promote absorption, by directly stimulating this system of vessels, but rather accomplish the removal of effused fluid, by *arresting* its secretion—by controlling the circulation within the diseased capillaries of the parts affected.

An investigation into the pathology of dysentery, in the highest degree corroborates the use of emetics; all the symptoms declaring the existence of *intestinal inflammation*, and *consequent spasmodic constriction*. Of the various theories which have been promulgated as to the pathology of this disease, each may be made to countenance the above pathological exposition. Whatever theory, therefore, we may adopt, we can substantiate the utility and *modus medendi* of emetics. If with SYDENHAM, we believe it to be the result of checked cutaneous transpiration; if with CÆLIUS AURELIANUS, AKENSIDE, STOLL and RICHTER, we admit it to be a rheumatic affection of the digestive tube; if with CULLEN, we believe it to be a catarrh of the intestines; if we believe it to consist in spasm of the colon, the *colunitis* of BALLINGATE, whichever of these opinions we adopt, the principal indications are, *to relieve spasmodic constriction, to determine to the surface, and to take off local inflammation by controlling the capillary circulation*. In accomplishing these indications, a knowledge of the *secondary operation* of emetics becomes of the highest importance. Of these various theories, we believe that which makes the disease to consist in *inflammation*, and *consequent spasm* of the intestinal tube, to be most in accordance with the truth. To obviate this morbid condition of the intestines, the relaxant properties of emetics promise much. Their *sedative action* upon the capillary system of vessels, controlling the circulation within the inflamed parts and the relaxation which must always be a concomitant of the abstraction of blood from the capillaries of the inflamed part, conspire to give them claims to the utmost confidence. Spasm must be considered, in a large majority of cases, as dependant upon an accumulation of nervous energy in a part. In whatever part an accumulation of the vital fluid occurs, a preternatural accumulation of the *vis nervea* is the natural consequence. To take off this preternatural determination of the circulatory and nervous fluids, by creating an artificial *centre of irritation*, is the principal object in exhibiting an emetic in dysentery. With their *primary action*, viz. the ejection of contents of the stomach, we have little to do; their *modus medendi* is to be sought for in their *sedative action upon the capillary system of vessels* induced by the determination of the circulatory and nervous fluids to the emetic oppressed stomach.

From what has already been said, we feel that we may have been

anticipated in extending their use to all the remaining phlegmasiæ. In all inflammations of the serous membranes they exert a most remedial influence, by virtue of their sedative action upon the extreme vessels, and the more delicate the system of vessels, the greater power they appear to exert. Their highly remedial influence in ophthalmia and erysipelas, in which diseases the vessels of the most delicate tissues of the system are affected, viz. the conjunctiva and the skin, are corroborative of the assertion.

We are not ignorant that erysipelas has been thought by the eminent DESAULT to be dependant upon derangement of the biliary system, and its cure essentially connected with the copious evacuations of bile, incident to the exhibition of an emetic. We differ, in toto, from this justly celebrated authority. We should be inclined to refer the preternatural secretion and consequent vitiation of the hepatic secretion, to some morbid condition of the *capillary* vessels of the liver and general system, rather than view the vitiated secretion as the *cause* of the primary derangement, and it is to the peculiar action which emetics exerts upon this system of minute vessels, that we are to look for the solution of their *modus medendi*. If the morbid action consists in spasm and inflammation of these vessels, then we should point to the use of emetics as the most efficient means of producing universal relaxation, and consequent diminution of arterial capillary action.

Enough has been said to induce the practitioner to extend the use of emetics to all the remaining phlegmasiæ. In enteritis, peritonitis, cynanche trachealis, cynanche laryngea, and cynanche maligna, the most formidable of all anginose diseases, the use of emetics are indispensable. In all inflammations affecting the denser membranes, they become the most powerful auxiliaries of the lancet, but it is principally in the latter disease that their remedial agency is most conspicuous. The rapidity with which the inflammation extends itself, and its proneness to pass into a state of mortification, imperiously demands that we resort to the use of emetics, whose action seems particularly directed against the inflammatory condition of the capillaries of the mucous membrane lining the throat, whose excessive action and consequent mortification constitutes the danger of this truly formidable disease.

That a prompt resort, and a repeated use of the lancet will accomplish most of the indications for which we have recommended the use of emetics, is a fact which would seem to invalidate the importance which we have endeavoured to attach to this class of medicines in treating the phlegmasia, if not otherwise explained. That the

lancet is a direct sedative to the capillary system of vessels, by emptying the larger vessels of their contents, and thus creating a determination to these, which is effected at the *expense* of the capillary system, is generally admitted; and it would appear that a repetition of its use would effect the very indication for which we prescribe our emetic, viz. to controul the circulation within the capillary system, which, if it does not constitute, certainly is favourable to the existence of inflammation. We do not wish for a moment to countenance the idea that we reject the use of the lancet. We rather resort to emetics as its most powerful auxiliary, and as instrumental in *protracting* that condition of the capillary circulation induced by the use of the lancet, without effecting an excessive expenditure of the vital fluid, which favours serous effusion, an evil which is also to be avoided. Though the lancet produces a change in the circulation, in which the tide sets from the seat of inflammation, viz. the extreme vessels to those of larger diameter, the system soon establishes an equilibrium, and the seat of irritation again becomes a point to which the circulation is attracted, until a repetition of its use again produces a revulsion. To avoid this excessive expenditure of the vital fluid, we prescribe emetics, which effectually controul without diminishing the quantity of the circulating mass, already so much reduced as to render its further abstraction liable to be attended with dangerous consequences.

With this exposition of our views of the pathology of dropsy, we pass on to say a few words to reconcile the great discrepancy which pervades the profession relative to the use of emetics in apoplexy. The weight of authority, we are well aware, is against their use, and the acknowledged pathology of the disease, which makes it to consist in a congested state of the cerebral vessels, would appear to give additional weight to the objecting party. A reference, however, to the phenomena which invariably obtain previous to the act of emesis, will in a great degree, invalidate the reasonings of those who oppose their use. The pale and shrivelled countenance, the frequent, feeble, and irregular pulse, the diminished capillary circulation, indicated by the paleness of the general surface, all tend to prove the fallacy of an assertion, based upon high authority, viz. that emetics "have a direct tendency to increase the fulness of these vessels, (cerebral,) by increasing the arterial and retarding the venous circulation." Now we rather think that it is susceptible of proof, that directly the reverse of this obtains. Previous to the act of vomition, there always exists a diminished action in the vessels of these systems by which both the velocity and quantity of the circulating mass is materially

diminished in the cerebral vessels. To the *sedative* action of an emetic upon the heart and arteries and other circulatory organs, are we to look for the fact which can alone reconcile the discrepancy of opinion relative to the use of emetics in apoplexy. By virtue of the sympathy which exists between the stomach and heart, resulting in a diminished action of the latter, the afflux of blood to the head, is so much diminished as in a great measure to preclude the possibility of danger during the short period of emesis by preventing the free return of the circulatory mass through the venous channels. It is, then, by a reference to the sedative effects of emetics, previously to the act of vomiting, thereby controlling the cerebral circulation, that we think ourselves justified in recommending the exhibition of this class of medicines as legitimate resources of the art in treating apoplexy.

A few words upon the diaphoretic properties of antimonials we hope will not be deemed superfluous. In accomplishing this important indication, antimonials are singularly efficacious. By the universal relaxation which pervades the system when under nausea, relieving the morbidly constricted vessels of the surface, thus *eliciting* the natural cutaneous transpiration; by the moisture and even profuse perspiration which bedews the forehead, and even whole body, of the patient, when in the act of vomiting, whose natural secretions have just before been locked up by febrile action; by the softness and coolness of the skin consequent to these attempts at vomiting; by these and other considerations, we should be disposed to give antimonials a decided preference, as diaphoretics, over that class of stimulant medicines, which, by increasing the circulation, *extorts* perspiration from the constricted capillaries of the surface. In the exhibition of the former, the *spasm* of these vessels is first subdued by the relaxation incident to nausea, before the attempt at vomiting, by increasing the circulation, force out cutaneous transpiration, thus removing all those fears which might justly be entertained when prescribing those stimulant medicines which break up spasm, without previously relieving the morbidly tonic condition of the cutaneous capillary system.

As expectorants, the value of antimonial emetics are too generally acknowledged to require comment here, we shall, therefore, content ourselves with saying a few words upon their *modus medendi*.

Directly stimulant to the stomach, and thus concentrating nervous energy in this viscus, an emetic becomes indirectly a powerful sedative to the rest of the system. By the intervention of the diminished action of the heart, a corresponding change is produced in the capillaries, ramifying upon the mucous membrane of the bronchiæ and parenchyma of the lungs. A diminished action in these vessels is an ap-

proximation to their natural and healthy condition, and mucous secretion is the result in a system of vessels whose action before was suspended or performed in a limited manner, owing to capillary spasm. To this *indirect sedative* power of emetics must be attributed the protean action of this class of medicines. As sialagogues, by relaxing the salivary glands to that degree as to incapacitate them for the retention of their peculiar fluids. As emmenagogues, by relaxing the uterine capillaries, the morbidly tonic condition of which may frequently be regarded as the cause of the non-appearance of their peculiar secretion. As narcotics, by controlling inordinate arterial action, which favours the accumulation of nervous energy in important organs, and especially in the brain, upon which that distress and anxiety peculiar to intense febrile action is dependant. As the system has approximated the natural and healthy condition, by the equalizing action of an emetic, or rather by its power of determining nervous energy from the oppressed organ to the stomach, we have witnessed corresponding changes in the feelings of the patient, varying from mental and corporeal tranquillity to profound natural sleep.

It now only remains for us to say something upon the mode of administering emetics, by which the greatest advantages are to be gained; the ordinary manner of administering them being deficient in that principle of gentle, repeated, and protracted emesis, upon which success must chiefly depend. We believe that it will be in unison with the facts, when we assert that the usual mode of administering an emetic at the present day, is by exhibiting four or five grains, in portions of three-fourths of a grain to a grain, at intervals of from ten to fifteen minutes, until such time as the act of vomiting be induced, aiding and accelerating its operation by copious draughts of tepid water, or a weak infusion of chamomile flowers. By the solvent powers of the former, and the emetic qualities of the latter, every portion of the original emetic substance is ejected from the stomach; thus interrupting its cathartic operation, to induce which, it is necessary that a portion of the emetic should pass the pyloric orifice of the stomach, and be introduced into the alimentary canal. Nor is the loss of its cathartic operation the only objection which can be urged against this mode of administering emetics. Administered as above, their effects are too *evanescent* to derive the advantages which ought to result from a more judicious administration of them; the system not being under their effects longer than from three-fourths of an hour to an hour and a half. Even when resorted to for this short period, no one has failed to observe their remedial effects; a softer pulse, the reëstablishment of the cutaneous transpiration, and a more

tranquil condition of the patient. are the usual results of their administration. But, as we observed, when thus administered, the beneficial effects are evanescent, the speedy withdrawal of the emetic, producing these changes, necessarily favours the reëstablishment of febrile action. We know of no therapeutic principle more allied to truth, than that upon which we have always practiced in diseases of associated action, viz. that it is by *repeated impressions* upon the circulatory system through the intervention of the *gastro-cardiac* sympathy, that we must hope to break through the chain of morbid associations, constituting febrile diseases.

Gutta cavat lapidem, non vi, sed sæpe cadendo.

It is by a steady perseverance in the use of emetics given in minute doses of half a grain at intervals of half an hour, that the system will be kept so long under their sedative effects, as most effectually to trammel the disease, and thus offer an obstacle to its further progress by association. By the use of emetics, the system is brought into a condition directly opposite to that of febrile action; and it is only by protracting this state of things, viz. by keeping up *continued* but *moderate pressure* upon the *arterial system* by the sedative effects of an emetic, that we can dissolve the chain of morbid actions. An attentive observation of the phenomena which develop themselves, while the system is under the effect of an emetic, will convince us of the necessity of protracting the emetic action. In the exhibition, no very sensible effects are produced by the first three or four half grains. A well-directed observation would, however, detect certain changes which would escape the eye of one not fully skilled in the exhibition of emetics. The pulse assumes a softer and more frequent action, there is less cerebral excitability, and general corporeal composure; nausea now supervenes, and with it universal relaxation, succeeded by attempts at vomiting, which accomplished, a universal relaxation pervades the cutaneous capillaries, and a corresponding quantity of perspirable fluid is the result. This approximation to the healthy standard is of short duration; as the effects of the emetic pass off, febrile action again reëstablishes itself, until the lapse of the half hour brings with it another half grain, which never fails to produce even greater relief, each interval of febrile action being of greater duration, until the disease thus checked from time to time, by the obstacles which it encounters in the *sedative action* of the emetic, is so trammelled in its progress, as eventually to be forced to yield. When we contrast this practice with that which now obtains, we think its advantages must be apparent to the most casual observation. In protracting the emetic action by the exhibition of minute doses at

proper intervals, we interpose our second dose just at a time when all the advantages derived from the emetic substances are about to wear off, and febrile action again begins to establish itself; at this critical moment we place our *veto* upon its further progress by a repetition of the dose. In the ordinary mode of administering emetics, all the advantages gained by their exhibition are lost by a discontinuance of them. Though the disease be partially subdued in the absence of the emetic, it gains sufficient strength again to become formidable. Though a victory is gained, all the advantages which might result from a pursuit and total rout of the enemy are slothfully abandoned.

To some of the profession, the practice of protracting the emetic action may be fraught with many and great evils, as tending to induce an irritable condition of the stomach, not a little to be dreaded. Such fears may be calmed by the fact, that when administered in the above small doses, we have never known them to have such an effect. This will be the more easily credible, when we assert that it is never necessary to administer more than from four to six grains before the *criterion* which induces its discontinuance supervenes. One or two copious alvine evacuations have always been our signal for its discontinuance. Such then are the additional views based upon the *secondary action of emetics* which we proposed to give, and upon which has been based a practice singularly successful in diseases of associated action.

New York, August, 1831.

ART. X. *Report of the Committee of the Board of Health of Charleston, respecting the Prevalence of Varioloid and Small-pox in that city during the year 1829.*

THE Committee of the Board of Health, appointed to report upon the prevalence of varioloid and small-pox during the last year, and for other purposes, respectfully *Report,*

That, to accomplish the duties assigned them satisfactorily, they sent the following Circular to the Physicians of Charleston:—

Charleston, Nov. 25th, 1830.

DEAR SIR,

Having been appointed a Committee of the Board of Health, to ascertain how far the varioloid and small-pox have prevailed, &c. &c. we respectfully, (in order to accomplish satisfactorily the intentions of the Board,) present for

your consideration the following interrogations, and earnestly request a reply as soon as possible.

Query 1st. Have you seen any cases of small-pox, and how many during the last year?

2d. Have all the symptoms and stages of small-pox been exhibited in any of your patients who have been vaccinated?

3d. Have you had any cases of varioloid, and how many?

4th. How do you distinguish varioloid from small-pox, and how from varicella or chicken-pox?

5th. Have you ever known varioloid to occur among those who had the natural, or been inoculated with small-pox, or have you ever seen varioloid in those persons who have been protected neither by inoculation from small-pox or vaccine?

6th. Have any of your patients with varioloid at any time of your practice, (stating the length of time you have practised,) died?

7th. Do you regard varioloid as a distinct disease, or as modified small-pox?

8th. Has your confidence in the protective power of the vaccine been lessened?

9th. Do you think that the careless manner in which persons are vaccinated by those who are not physicians, and are incapable of judging, ought to be considered a great evil, and a source calculated to lessen confidence in a valuable preventive of small-pox?

10th. During your experience have you not found it a common custom for persons not physicians to vaccinate their domestics and families, to save the expense of getting a physician?

11th. Do you not think that taking so much matter, as is usually the custom, from a pustule when there is only one, lessens the chance of a constitutional impression being made; and that it would be better to leave one pustule uninjured, to go through all the stages?

12th. Do you think at any period of life the vaccine would become diminished in its power on the system to resist the influence of small-pox?

13th. How do you distinguish a spurious from a genuine vaccine pustule?

With due consideration, we are, respectfully,

THOMAS Y. SIMONS, M. D. <i>Chairman.</i>	} <i>Committee</i> <i>of</i> <i>Board of Health.</i>
J. MOTTE CAMPBELL, M. D.	
GEORGE LOGAN, M. D.	

Your Committee was prevented from giving an earlier report, in consequence of the medical gentlemen not having before sent answers to the above circular. They, however, now offer the following to the consideration of the Board. The Committee will first give a concise history of the small-pox epidemic; and secondly, offer the opinions which are entertained in Europe and America upon the value of vaccine as a means of controlling the ravages of small-pox.

In the performance of this important duty, they will be as concise as possible, avoiding the adoption of any speculative opinions, and

presenting only such views as seem derivable from actual experience and observation.

In February, 1830, the small-pox and varioloid first made their appearance; for a year or two previous, scarlatina, measles, and cynanche maligna, had prevailed, and for several years the small-pox had been at the Lazaretto, being imported cases. During the summer season, the small-pox and variola seemed to have disappeared, but, on the approach of winter, they again made their appearance.

The small-pox has assumed the various forms of confluent and distinct, and has been extremely severe in its type, and frequently fatal. The number of deaths, according to the records of the Board of Health, which does not include Charleston Neck, has been fifty-three.

Sometimes this disease, both in the confluent and distinct form, has gone through all the regular stadia with the pustules fully and properly developed, which your Committee deem unnecessary to describe. In others, however, the eruptions have assumed the appearance of measles; have, in the progress to filling and maturation, become flattened, being imperfectly filled with purulent matter, and, in their termination, they have dried up, forming no regular scabs, and showing beneath an inflamed, and in some instances a gangrenous aspect. In proportion with the imperfect development of the pustules, have there been great determination to, and inflammation of, the mucous tissues of the thorax and alimentary canal, and the tissues of the brain. This form has generally proved fatal. The varioloid, as it has been termed, was ushered in with great pain in the head and spine, accompanied frequently with delirium and gastro-intestinal irritation: on the fourth day an eruption appeared on the cutaneous surface, when the symptoms just described began to subside. This eruption has assumed a very irregular appearance—the papular, vesicular, and pustular, all in many cases existing at the same time; and on the sixth day after their appearance, in place of maturing with fever as in small-pox, they have desiccated, leaving red splotches, in a few instances depressions, but more frequently prominences. There have been some modifications of this—the disease partaking partly of the character just described, and partly of small-pox. Sometimes successive crops of eruptions have appeared in the course of the disease: varicella has likewise prevailed contemporaneously with small-pox and varioloid, but the fever has been, (previous to the eruption,) very mild, short, and irregular in its duration, and afterwards only vesicles have appeared, which were of a few days continuance. Your Committee, however, are persuaded that many cases

of varicella have been confounded with varioloid. Regarding the distinct characteristics of these two diseases, there has been great discrepancy of opinion among medical gentlemen here, as well as in other portions of the world. Your Committee will decline, on a subject so unsettled in medical opinion, attempting to make any other diagnostic of variola, varioloid, or varicella, than the description just given, remarking,

1st. That varioloid is regarded by some physicians as small-pox, modified by vaccine and inoculation of small-pox.

2d. That a few physicians consider it as a distinct disease.

3d. As secondary small-pox, similar to the diseases which medical writers, antecedent to the introduction of vaccine, described as horn-pock, nurses-pock, silquose-pock, sheep-pock, bladder-pock, &c.

4th. It has been suggested, that only varicella and small-pox have prevailed, there being an intimate relation between these two diseases, and that which has been termed varioloid is varicella, modified and increased in virulence by the epidemic influence of small-pox, as remittent fevers are aggravated in their type during the prevalence of epidemic stranger's fever.

From the answers which have been received to the circular, it appears that varioloid occurred among the vaccinated, the variolated, (or those who have been inoculated with small-pox;) among a few who have had small-pox naturally, two of whom have died; and in a few instances in those who have been protected neither by natural or inoculated small-pox, or vaccination, similar phenomena have been noticed in the small-pox epidemics which have appeared elsewhere. Your Committee can give no adequate idea of the number of cases of small-pox or varioloid which have occurred, not having received answers from all the practitioners of our city; and of those who did return answers, but few kept a register of their cases; the proportion, therefore, of those who have died, with those who have been sick, cannot be ascertained. Your Committee, however, are satisfied that the proportion of deaths from varioloid, in comparison with the number that have been sick, has been small. According to the register of the Board of Health, there have been but eight deaths from varioloid. Some of these may justly be ascribed to the severity of our winter, producing violent concomitant catarrhal affections; and some cases which have been called varioloid, there is good reason to believe were small-pox.

The second point of consideration which your committee will bring to your view, are the opinions which are entertained in Europe and America of the value of vaccine as a means of controlling the

ravages of small-pox. And this is the more imperatively called for, from the distrust which has been awakened in the efficacy of vaccine, since the prevalence of varioloid. It has been already stated that varioloid has attacked those who have been inoculated with small-pox, those who have had the small-pox naturally, those who have been vaccinated, and those who have been altogether unprotected. These facts have been observed, not only in Charleston, but in other portions of the United States, and in different countries of Europe, where varioloid and small-pox have prevailed. Now it is true that the varioloid occurs more frequently among the vaccinated. But it must be recollected that by far the greater proportion of individuals in Europe and America are protected by vaccine, and hence, by parity of reasoning, where varioloid does prevail, the greater proportion of cases must be among the vaccinated. It may likewise be called to mind that antecedent to vaccination secondary small-pox was of frequent occurrence, and has been fully and satisfactorily described by the medical writers of those days, under various appellations, as nurses-pock, sheep-pock, siliquose-pock, &c. &c. &c.

With these prefatory remarks, your committee will offer you opinions derivable from the highest authorities, premising that the medical periodicals abound with confirmatory testimonials of the opinions which are now presented.

In 1805, in consequence of varioloid occurring after vaccination, and the distrust which was awakened in many as to its real value, the College of Physicians of London were instructed to investigate the subject and report. The following extracts from that report are offered:—

“Deeply impressed,” says that distinguished body, “with the importance of an inquiry which equally involves the lives of individuals, and the public prosperity, they have made every exertion to investigate the subject fully and impartially. In aid of the knowledge and experience of the members of their own body, they have applied, separately to each of the licentiates of the college; they have corresponded with the Colleges of Physicians of Dublin and Edinburgh, with the Colleges of Surgeons of London, Edinburgh, and Dublin; they have called upon the societies established for vaccination for an account of their practice, to what extent it has been carried on, and what has been the result of their experience, and they have, by public notice, invited individuals to contribute whatever information they had severally collected. They have, in consequence, been furnished with a mass of evidence, communicated with the greatest readiness and candour, which enables them to speak with confidence on all the principal points referred to them.”

After referring to the general use of, and confidence in, vaccination, the college goes on to state:—

“The security derived from vaccination against the small-pox, if not absolutely perfect, is as nearly so as can perhaps, be expected from any human discovery: for against several hundred thousand cases with the results of which the college have been made acquainted, the number of alleged failures has been surprisingly small. So much so as to form no reasonable objection to the general adoption of vaccination; for it appears that there are not nearly so many failures in a given number of vaccinated persons, as there are deaths in an equal number of persons inoculated for the small-pox. Nothing can more clearly demonstrate the superiority of vaccination over the inoculation of the small-pox, than this consideration; and it is a most important fact, which has been confirmed in the course of this inquiry, that in almost every case where the small-pox has succeeded vaccination, whether by inoculation or by casual infection, the disease has varied much from its ordinary course; it has neither been the same in violence nor in the duration of its symptoms, but has, with very few exceptions, been remarkably mild—as if the small-pox had been deprived, by the previous vaccination, of all its usual malignity.”

This strong confirmation of the value of vaccine, emanating from a learned body, deriving its sources of information from all the most learned medical bodies of Great Britain and Ireland, has been fully sustained by the subsequent experience and observations of physicians there. on the Continent of Europe, and in the United States of America. As this report is intended not for the information of medical gentlemen, whose reading upon this important topic it is presumed, has made them fully acquainted with medical opinion throughout the world, but for the citizens, whose confidence in vaccine has been in some degree shaken, your committee must ask indulgence when they offer accumulated testimony confirmatory of the opinion of the College of Physicians of London, during the last twenty-five years. Dr. THOMSON, in an able communication to Sir J. M^cGREGOR, the director-general of the medical department of Great Britain, &c. relative to small-pox, varioloid, and varicella, as it prevailed in Scotland, derivable from his own experience and observation, and of some of the most respectable physicians of that country, makes the following remarks:—

“It has been impossible to see the general mildness of the varioloid epidemic in those who had undergone the process of vaccination, and the severity, malignity, and fatality of the same disease in the vaccinated, and not to be convinced of the great and salutary powers of cow-pock in modifying small-pox, in those who were afterwards affected with this disease. Proofs cannot be imagined more convincing and satisfactory of the incalculable benefits bestowed upon mankind by its discoverer, than those I have had the pleasure of witnessing. It has been very agreeable, also, to observe that the terrors at first excited by the occurrence of the varioloid epidemic in the families of those who had undergone cow-pock inoculation, have gradually given way in the progress of the disease; and that the comparison of small-pox in their modified forms has

often forced a conviction of the advantages of cow-pock inoculation upon the minds even of the most ignorant and prejudiced, and induced them to seek protection for themselves and their offspring in a practice which they had formerly neglected or despised."

A committee of the "Academie Royale," of Paris, make in the conclusion of their report, the following remarks:—

"It is evident that when the utmost concessions are made, when all the causes of small-pox after vaccination which have been reported are considered authentic, it would be sufficient to compare these rare occurrences with the innumerable cases of the disease in those who have not been vaccinated; and also with the immense number of those who have undergone the process, and been exposed to contagion with impunity, in order to be convinced that vaccine inoculation is one of the most beautiful and useful discoveries that has ever been made, and that this invaluable antidote still preserves its virtues."

In an interesting history of the variolous and varioloid epidemic, which prevailed in Philadelphia in 1823 and 1824, by Drs. MITCHELL and BELL, the following important statement is made, of two hundred and forty-eight cases of small-pox and varioloid, which came under their notice—one hundred and fifty-five were unprotected, of whom eighty-five died; sixty-four vaccinated, of whom one died; nine inoculated, of whom three died; seven previous small-pox, of whom three died; thirteen unknown—no deaths. Now, here is clearly shown the ravages which have occurred to the unprotected, there being eighty-five deaths, while of the vaccinated only one; of the inoculated and previous small-pox, each three, proving that the vaccine made a milder form than any other. If there were a greater proportion of vaccinated than those who were inoculated, or had previous small-pox, who had varioloid, it must be remembered that the proportion of vaccinated to the proportion of inoculated exposed to varioloid, must have been as at least four to one; add to this the danger and fatality resulting from inoculation, and the mildness and innocency of vaccine, and its value is strikingly illustrated. In the concluding observations of a Committee of the Philadelphia Society, appointed to report on the variolous and varioloid disease, which prevailed in Philadelphia, in 1827, the following language is used.

"Thus we may, without the least want of candour, come to the conclusion, that only one death from small-pox after vaccination had occurred during the year 1827, among eighty thousand vaccinated persons, and during the prevalence of a most malignant and mortal small-pox, while several individuals have lost their lives from small-pox after they had already gone once through the disease. It appears then clearly that vaccination ought to lose nothing of the public confidence, and as a protection from the fatal effects of genuine small-pox, it may safely be asserted, it is in every sense to be preferred to inoculation."

In this latter opinion, your Committee most fully concur; and they are authorized to state, that such is the opinion of almost every physician in our city. It will now be proper to offer the opinions which have been advanced by Committees appointed by the Medical Society of South Carolina, and which were adopted and approved.

A Committee, in an interesting report upon the epidemic small-pox of 1817, as it existed in Charleston, state

“That their confidence in the efficacy of the vaccine as a preventive of small-pox continues undiminished, and they think it the only means by which the ravages of that disease can be effectually put a stop to. Proofs of its efficacy are continually presented to our view. They surround us on all sides. Did it not destroy the susceptibility to small-pox, every house would become an hospital. Scarcely would there be a family but would have to mourn the loss of some favourite member by its destructive influence; indeed, what must have been the situation of our city for many months past, where so many thousands have relied on it exclusively.”

Again, the Committee on the epidemic small-pox of 1824, declare that “vaccine inoculation, when properly and judiciously performed, still maintains the same confidence which has hitherto been reposed in it, as a protection against small-pox.”

Having, from accumulated testimony, which your Committee collected from the periodical and other medical works which have been published since the introduction of vaccine, (and among which they have seen none that does not admit it as the safest and most valuable means of checking the ravages of small-pox,) presented to your notice evidences from the highest authority of its value; they will consider some of the questions which were proposed in the circular, in the first part of this report, some of them having been already noticed.

1st, Question 8th. Has your confidence in the protective power of the vaccine been lessened? It has been answered by all, that although vaccine cannot be regarded as protecting from varioloid, it does, most generally, from small-pox after vaccination, and not one death; and in these few cases the vaccine was supposed to be genuine, only from the patient's having been vaccinated by physicians, and not from a personal knowledge of the cases, and that it is decidedly the most salutary means of checking the ravages of small-pox.

Q. 9th. Do you think that the careless manner in which persons are vaccinated by those who are not physicians, and are incapable of judging, ought to be considered a great evil and a source calculated to lessen confidence in a valuable preventive of small-pox?

To this, every physician from whom the Committee have had information concurs. They further state, to this cause may justly be ascribed a number of the cases of varioloid and small-pox, which

occur after vaccination, and that it has tended materially to impair the confidence in vaccine.

Q. 10th. During your experience, have you not found it a common custom for persons, not physicians, to vaccinate their domestics and families, to save the expense of getting a physician? It has been responded, that few heads of families employ a physician to vaccinate their servants, and many even vaccinate their children.

Q. 11th. Do you not think that taking so much matter as is usually the custom, from a pustule when there is only one, lessens the chance of a constitutional impression being made; and that it would be better to leave one pustule uninjured than to go through all the stages?

It is generally believed, that taking too much matter from one pustule might prevent its full and proper development. That it would be better to make two or three incisions on one arm, and when there is only one pustule, to take as little as possible from it as a matter of prudence—the fact of its injurious tendency being certainly and positively ascertained.

Q. 12th. Do you think at any period of life the vaccine would become diminished in its power on the system, to resist the influence of small-pox?

Considerable discrepancy of opinion exists among the physicians of Charleston, as well as in other portions of the United States, and in Europe, upon this subject. It must, at present, be considered as only speculative, sufficient data not having been obtained, by which we could in any manner come to a positive conclusion.

It is generally recommended to re-vaccinate whenever small-pox epidemic occurs, as a matter of security; for the second vaccination will prove whether the first was efficacious or not. For if the first vaccination be efficacious, the second, like varioloid, will run through all its stages and desiccate, and not maturate on the sixth day after the eruption.

Q. 13th. How do you distinguish a spurious from a genuine vaccine pustule?

The only answer to this, which the committee can make, is to describe what constitutes genuine vaccine, and whatever differs materially from this, may be considered as spurious. On the third day after the introduction of the vaccine virus, a red cone-shaped pimple is observed—from the fourth to the sixth, seventh, and eighth days, a transparent, limpid fluid collects, and an areola of inflammation appears around the pustule. From the eighth to the fourteenth the fluid becomes turbid and of a purulent nature—the scab forms in the

centre of the pustule—the circular inflammation is increased and accompanied with fever. From the fourth to the sixteenth, eighteenth, and twentieth days, the scab is completely formed and drops off, leaving a scar having many depressions of a cellular appearance.

It must be remarked, that the stadia in the development of a vaccine pustule are lengthened or diminished in some degree by temperature, being lengthened by cold and lessened by heat. The vaccine virus should be used when it is perfectly limpid and transparent.

Such are the testimonials which your committee have been enabled to bring to your view. They have not given the individual opinions of the medical gentlemen who politely sent answers to the circular, as they would occupy too much space; but they believe they have fairly represented their opinions.

It will thus be seen, from the according testimony of the most scientific and observing physicians in Europe and America, that vaccine has been regarded as one of the greatest blessings conferred upon the human race.

If we look for perfection in any thing, we will be grievously mistaken; but it would be unwise and unphilosophical, because a discovery could not accomplish all that we could wish, that it should be discarded.

The correct method of ascertaining the value of any discovery, is to compare it with others, and if worse, to reject, if better, to adopt. Now your committee maintain, that the evidences which have been brought to your view, prove beyond all matter of controversy, that the introduction of vaccine, although it has not extirpated small-pox, has disarmed it of most of its terrors. Let us observe how many human beings throughout the world are protected alone by vaccine from small-pox, and it becomes a matter of wonder that so many escape that Protean disorder, and of those who do not escape, how few suffer, when it is proved in the unprotected to be most virulent in its form, and most fatal in its consequences. But when we come to consider the many abuses to which vaccination has been exposed, from the number of individuals who have vaccinated, who are incapable of judging what is genuine vaccine, and from the carelessness oftentimes of physicians in not accurately observing its different developments, our confidence in its salutary influence becomes greatly increased.

Before concluding, your committee, by way of recapitulation, would remark—

1st. That since the introduction of vaccine, small-pox has been much less frequent, and the number of deaths from it greatly diminished.

2d. That the inoculated with small-pox, and the vaccinated, have the varioloid with equal virulence, and if the number of vaccinated who have the varioloid be greater, it may be justly ascribed to the fact, that the greater proportion of individuals are protected by vaccine. Furthermore, varioloid sometimes occurs among those who have had the natural small-pox, as well as those who are altogether unprotected.

3d. That previous to the introduction of vaccination or inoculation with small-pox, secondary small-pox occurred, and presenting forms different from the genuine small-pox, but partaking of its character.

4th. That in a great number of cases where small-pox has occurred after vaccination, and even varioloid, it has arisen from the vaccine virus being spurious.

5th. That great carelessness has been exhibited in vaccination, it being regarded as a simple operation, and has, therefore, been performed by those who are incapable of deciding whether the vaccine virus has gone through its regular stages.

6th. That although vaccine does not exempt all persons from what is termed varioloid, it does the greater proportion, and must be considered as the most efficient and safe plan of checking the ravages of small-pox, and therefore should be continually practised. Finally, it may be proper to remark that vaccination, in place of diminishing in public confidence from time and experience, is increasing. It is becoming general, not only in Europe and America, and the colonies, but in India; and the present Turkish sultan has had his children vaccinated, as an example to, and a means of introducing it among, his people. In several kingdoms of Europe, vaccination is conducted under the auspices of government. In the United States it is generally recommended, and in a few large cities vaccine institutions have been instituted, but it is much to be deplored that a means so simple, and yet so signal in its beneficial effects, should still be so neglected. To show how efficient vaccine is when properly conducted, the following out of many other evidences are presented to your view.

Dr. LUDERS remarks, that of two hundred and twenty-three thousand nine hundred and thirty-nine vaccinated, between 1801 and 1822, in Holstein, where the measures of the government ensure a perfect vaccination, there had occurred, down to 1824, only two cases of small-pox, and that in Denmark, among four hundred and forty-seven thousand six hundred and five vaccinated, only one such case has been met with.

Again, in the Orphan Institution of Charleston, having one hundred

and fifty souls, all of whom, except the officers and servants, are children. Dr. LOGAN, the physician to that institution, remarks, “Not a single case of small-pox or varioloid has occurred. All of the children are vaccinated by him, and if they have been previously subjected to that process, are re-vaccinated, to test the efficiency of the previous vaccination; and these children have been allowed to have communication with the citizens generally.”

In conclusion, your committee would strenuously urge the propriety of vaccine institutions being established in the principal cities in our state, and would strongly recommend the citizens never to neglect having all under their care vaccinated. It is with pleasure they state that the city council have made an honourable and worthy advance in this important measure, and it is earnestly to be desired that what they have begun may be more generally and extensively adopted.

Respectfully submitted,

THOMAS Y. SIMONS, M. D.,	<i>Chairman.</i>	} <i>Committee.</i>
J. MOTTE CAMPBELL, M. D.		
GEORGE LOGAN, M. D.		

REVIEW.

ART. XI. *Observations on the Structure and Diseases of the Testis.*

By Sir ASTLEY COOPER, Bart. F. R. S., &c. pp. 245, large quarto, with plates. London, 1830.

IN undertaking a short analysis of this work for the information of our readers, it affords the greatest pleasure to express a conviction of its value, and of the many important professional precepts which it contains. The entire style in which it is got up, reflects much credit on the British press, and is evidently the result of much labour on the part of its distinguished author. The typographical part is finely executed, and the anatomical and pathological features elegantly illustrated by plates, each of which contains a number of figures representing natural colours. Sir Astley Cooper's name is so favourably known in the United States, that it requires no preparation of the public mind to receive indulgently his professional contributions. In addition to the intrinsic merit of the work under review, we cannot be less than much pleased in seeing one so abundantly rich as he is in professional honours, and in the means of personal comfort, still manifesting a zealous loyalty to his profession, and in the midst of every temptation to indulgence and relaxation, augmenting his well-earned fame, through the arduous course of dissections and clinical observations, and closing his professional life by bestowing such excellent legacies on his successors. In this he executes what all old practitioners recommend, but unfortunately too few perform.

The subjects treated of are the anatomy of the testis—its acute inflammation—simple chronic diseases—irritable testis—its inflammation from mumps—hydatids—scrofulous inflammation—venereal inflammation—ossific inflammation—scirrhus and fungoid diseases—castration—hydrocele—inflammation of the tunica vaginalis—cartilaginous bodies in the tunica vaginalis—fungoid inflammation in the same—hæmatocele—varicocele and chimney-sweeper's cancer. From the preceding list it will be seen that its range is extensive, and at least includes all the diseases of the testis that the practitioner is commonly called upon to manage.

Anatomy of the Testis.—This part of the subject has been treated in considerable detail, and the observations are, in general, confirmatory of the views of the best authorities. His injections and dissec-

tions seem to have been from the representation of them remarkably successful. There are, however, some peculiarities in his opinions. The average measurement of the testis he gives as two inches, by one and a half. This is certainly beyond the standard of the United States. The notion of a dartos muscle is repudiated in toto; in this opinion, however, we think the learned author rather too exclusive—for though in by far the majority of subjects its vestiges are extinct, yet occasionally the muscular character is very distinct, particularly when the colour has been evolved by the use of nitre. We also think contrary to his assertion, that the natural motions of the scrotum are in favour of this muscularity. Sir Astley considers the tunica albuginea to consist of two laminæ, the outer one resembling in its fibrous character the sclerotic coat of the eye—and the inner layer, which he calls the tunica vasculosa, and which he asserts to be highly vascular, and carrying its prolongations through the substance of the testis, to furnish pouches which conduct the blood-vessels, and envelope the tubuli seminiferi. This is an improved modification of the ordinary description of the septulæ testis. The corpus highmorianum, which exists at the back of the testis, Sir Astley, without referring to the established name, or indeed seeming to consider the knowledge of the part as common place, proposes, we think with very equivocal utility, to call the mediastinum testis. We have no objection to the term itself, but as the former is sanctioned by long and general usage, the introduction in its place of a new one, is detrimental, by a multiplication of terms, in a science already profuse in them. This effort, by the way, is not the only one in his book, and as the objection is equally applicable in other instances, we would here, as the advocate of anatomy, enter our general protest against it. There is no individual now alive, whose reputation can effect such substitution with the body of experienced anatomists, and a partial reform merely serves to make the inexperienced, misunderstand.

It will be unnecessary to trace the author through the description of the several parts of the testis, and its auxiliary structure; the whole is executed, as stated, much in detail, and in a very elaborate though satisfactory manner. The author coincides with Mr. JULIUS CLOQUET, on the anatomy of the cremaster muscle, (p. 42,) but does not refer to this very eminent anatomist as the origin of his information, in which we think he has made rather an exceptionable omission, considering that the observations of Mr. Cloquet on this subject are comparatively recent. We would indeed remark further, that as much of this work is devoted to pure anatomical descriptions of the testis, it as a scientific production, is singularly and rather lamenta-

bly destitute of reference, to what has been done by other able men; on precisely the same subject. Though elaborate, it is written with as much naïveté as if its excellent author were nearly all the time upon ground heretofore unexplored, either by his own countrymen or others. We do not think that the actual degree of novelty in it, compensates fully, for the omission of ordinary scientific acknowledgments. A strong personal regard for the author, inclines us to touch with lenity its defects; and yet this is one which perhaps the paramount interests of anatomy justify us in pointing out. We have indeed been frequently struck with the *insular* character of medical works emanating from the London press, and would scarcely suppose from the poverty of reference in them to the scientific labours of foreigners, that they radiate from a point of the globe, connected with other countries by almost innumerable channels of trade. Sir Astley is known to cultivate the most hospitable and liberal intercourse with foreign professional men; we therefore feel mortified in seeing this quarantine of other good works established in his own, especially when the latter might have been improved, by relaxing it somewhat. Living as we Americans do, at a great distance, and under circumstances unfavourable to national partialities or prejudices, we view tranquilly the scientific labours of all countries; we have no objection to receive such information as is useful, and as little hesitation in rejecting such as is trivial, and brought forward by the influence of high names or strong state connexions. Should these lines ever meet the eye of the distinguished author, we are assured that they will communicate nothing new to him in quoting, as also well worthy of study, the excellent plates and descriptions of ALBINUS, HALLER, LODER, RUYSCH, MUNRO. HUNTER, &c. &c. on the same topic, none of which are referred to by him.

The acknowledged difficulty of injecting the tubuli seminiferi will make the following hint valuable.

“Having traced the canals of the rete (testis) and found that they were situated in and completely inclosed in the tunica albuginea, it struck me that I might inject these tubes with glue, or even coarse injection, by passing a fine silver or steel pipe into the canals of the rete; and having made trial of this plan, I have injected the tubuli seminiferi with coloured fine injection, and the vasa efferentia were also readily filled, and have been thus able to make some beautiful preparations, more easily dissected and much less easily spoiled, than those which are made by injecting the tubes with quicksilver. The rete can even be filled with coarse injection, and the beginnings of the tubuli and of the vasa efferentia will receive the injection. If the injecting pipe be placed in the back of the mediastinum, the injection readily escapes into the absorbent vessels, and those of the spermatic cord become filled.”

Diseases.—The following observations exhibit a qualified and rational view of certain doctrines which were once very prevalent, and will perhaps indicate the general tenor of the author's mind on those points:—

“Hernia humoralis has been the term usually employed by surgeons, to express the inflammatory state of this organ (the testis;) but it is an appellation obviously founded in false physiological views, and upon mistaken pathological principles. The humoral pathology has vanished under better defined, and more correct pathological opinions; and diseases are at present attributed more to the altered actions of the solids, than to a change in the nature of the fluids. Yet perhaps the moderns have gone into a contrary extreme, and have too much lost sight of the fluids in the morbid changes of the body. For it is clear that the secreted fluids are often so changed in their nature, as to be capable of producing disease, and even of becoming poisonous—as the mucus of the urethra, in gonorrhœa—the matter of a chancre—the secretion of a small-pox pustule—and the fluid of a vaccine vesicle. My friend Mr. Colman has also found, that if the blood of a horse affected with glanders, be injected into the veins of another and healthy horse, it will produce the glanders in that animal; and thus he proves, by direct experiment, that the fluids are affected in that disease, as well as the solids; for its blood, the mucus of the membrane of the nose, the sinuses of the bones of the head and face, and even the lungs themselves, are brought into a diseased state. But still the term *hernia humoralis* is most improperly applied to inflammation of the testis; for although the disease be the consequence of gonorrhœa, it has nothing gonorrheal in its character, or venereal in its nature, and if I were not fearful of being thought affected, I should give it the name of *testitis*.”

These views will probably receive the sanction of most practical pathologists of the present day, and we would merely remark, that the author's difficulty of a good name, has already been overcome for some years past, by the adoption of that of *didymitis* by very excellent authority,* upon admitted principles of the modern and improved nomenclature of diseases.

Sir Astley recommends for this affection an active antiphlogistic treatment, with suspension of the part, and a recumbent position, in fact, the mode of management commonly adopted. Should circumstances render the application of leeches inconvenient, he considers that a good substitute may be found in puncturing, transversely, three or four veins of the scrotum with the point of a lancet, the patient being upright. They will bleed freely, especially if the scrotum be placed in warm water, and upon the patient lying down the bleeding will cease.

Should the depleting practice not succeed, from a peculiar irrita-

* Roche and Sansom.

bility of the patient's system, our author recommends submuriate of mercury, with Dover's powders; but he specifies neither the dose nor the duration of such treatment. He considers that immediately upon the formation of matter by suppuration, a free opening should be made into its focus, to prevent the destruction of the tubuli seminferi.

For the chronic induration and enlargement of the testis, consequent to its acute inflammation, Sir A. recommends various ointments, the basis of which is either mercury or iodine—he speaks highly of an oiled silk bag; also of the internal mercurial treatment, &c. From the variety of his prescriptions, we are inclined to think that he, like the rest of us, has found this rather an untractable affection.

The chapter on irritable testis is highly interesting; the affection is principally known by an undue and permanent sensibility of the part, attended with but little tumefaction. All motion and even handling is attended with an increase of pain. Sir A. says that it sometimes endures for years, and that he has found it occasionally so untractable, attended with so much distress, and producing such complete inaptitude for business or pleasure, that he has been thrice compelled to acquiesce in the wishes of patients to obtain relief from an operation. The author does not consider this disease to be inflammatory, but rather of the nature of *tic douloureux*. On dissecting the testicles which he removed for it, he found no apparent change of structure in any of them. His treatment is tonic, narcotic, mercurial, and revulsive, but not depletory.

On hydatid disease, Sir Astley remarks, that there is so strong a resemblance between it and hydrocele, that it is occasionally misunderstood by the most experienced practitioners of the metropolis.

"I know there are persons who never confess an error, but give all their successful cases to the world, carefully concealing those that are unfortunate, and thus lead young men to believe that our profession is much more successful than it really is; but this is a most unfair procedure, for it is only by a comparison of success and misfortune that a fair and honest conclusion can be drawn. A surgeon once said to me, 'you are foolish in mentioning your unsuccessful cases, which the world will discover soon enough.' To which I might have replied, 'you are dishonest in relating those only which are successful, as you thus give an improper colouring to your profession.'

"For myself, I confess that I have been two or three times mistaken, and put a lancet into the part, expecting to find water issue, and a few drops of blood only have followed. But further I will observe, that I have no shame in confessing this, nor have I seen mischief arising from it; but on the contrary, in doubtful cases, I recommend that a small incision be made into the tunica vaginalis, to ascertain if it contain a fluid or not. In doing this, no injury can happen to

the testis, and the surgeon's mind is completely at rest respecting the existence of hydrocele."

In addition to this test, Sir Astley considers that the following diagnostics should be attended to in hydatid disease:—A yielding rather than a fluctuation—a heavier swelling—the general form of the testis being preserved, although it is somewhat more pyriform—the entire absence of transparency—the sensation of the testis being squeezed, if the compression be considerable—the dilated state of the vessels of the cord and scrotum—and the testis in hydrocele being felt at the lower and back part of the swelling.

Our personal experience is in favour of the difficulty of distinguishing between hydrocele and hydatid disease, and we have seen one case where the affection was not cleared up until a trocar was introduced in fact for a hydrocele, and the water drawn off.

Sir Astley considers all other treatment but extirpation as useless in this disease, and his experience teaches that to be completely successful. We are sorry that we cannot join him in this experience, in two cases which have come under our view, and where the testicle was the size of a large ostrich egg; it was found to be attended with great enlargement and fungoid degenerescence of the lumbar lymphatic glands. In the one case the patient died shortly after the operation, and in the other at a more remote period. The plate on this disease is admirably executed.

The scrofulous inflammation of the testis, is considered by the author to be merely the result of that vitiation of our tissues which occurs in the scrofulous diathesis: he has given the several indications of this which we have no occasion to repeat. He considers the most of the secretory glands as exempt from this degenerescence excepting the testicle, which is subject to it from puberty till manhood, and occasionally even in infancy. This affection is marked by swelling, without pain, and having a very slow increase; the scrotum is undischoloured, and its veins are not enlarged. After a while suppuration follows, and most frequently in the epididymis. If the affection be not cured, the testis wastes away, until only a very small portion is left.

As Sir Astley views this as a disease of debility, he accordingly recommends air, sea-bathing, tonics, alteratives and iodine; to cure the sinuses which are left he uses stimulating injections.

Venereal inflammation of the testis, which may be doubted by some, our author speaks of as having frequently presented itself to him, along with the secondary symptoms of syphilis. His remedy for it, is a course of mercury.

His observations on fungoid disease present the characters of this affection in extenso, and in a very interesting light. When once formed he considers the complaint as hopeless, for it runs on to a fatal termination in spite of internal remedies, castration, or any thing else which has been heretofore devised. He, notwithstanding, recommends the removal of the testicle within three months of the beginning of the disease, and the use of alterative medicines to prevent the return of the latter. It is scarcely necessary to state that this alterative plan consists in the administration of the preparations of mercury. As the cases quoted in illustration were all fatal, we have yet to learn whether the treatment will succeed.

On the subject of varicocele, Sir Astley recommends the palliative treatment in common use, as a suspensory bandage, refrigerant lotions, and avoiding tight clothing about the abdomen. He puts no confidence in tying up the spermatic veins, and makes the following remarks thereon.

“It is an operation which I should dread most exceedingly, as placing the life in great hazard, and which I would not therefore recommend: for operations upon veins, from the great irritability of those vessels, are more dangerous than those on arteries, extended inflammation sometimes following, sometimes even to the heart itself; and often a suppurative inflammation on their inner coats, which I have several times seen destroy life in operations on the veins of the extremities.”

In taking our leave of this production, we feel it a duty to express again our sentiments of its value, and to recommend it to the attention of the medical public.

W. E. H.

BIBLIOGRAPHICAL NOTICES.

- XII. *History of Chronic Phlegmasia, or Inflammations, founded on Clinical Experience and Pathological Anatomy, exhibiting a view of the different varieties and complications of these Diseases, with their various Methods of Treatment.* By F. J. V. BROUSSAIS, M. D. Knight of the Royal Order of the Legion of Honour, Physician-in-Chief and First Professor in the Military Hospital of Instruction of Paris, Member of the Royal Academy of Medicine, of the Royal Medical Society of Madrid, of the Patriotic Society of Cordova, Corresponding Member of the Society of Emulation of Liege, of the Medical Societies of Philadelphia, New Orleans, and Louvain, &c. &c. Translated from the French of the Fourth Edition, by ISAAC HAYS, M. D. and R. EGLESFELD GRIFFITH, M. D. Members of the American Philosophical Society, of the Academy of Natural Sciences, Honorary Members of the Philadelphia Medical Society, &c. &c. Philadelphia, Carey & Lea. 8vo. Vol. I. pp. 497; Vol. II. pp. 404.

We have long desired to see an English version of this chef-d'œuvre of the founder of physiological medicine. Standing as it does, as the parent stock whence have issued the two rival schools of modern medicine, its mode of investigating diseases, as well as the facts which it contains, should be familiar to all who take an interest in following up medical science in its present rapidly improving condition. For where shall we find, among the numerous works which have appeared in France since the first edition of the *History of Chronic Phlegmasia*, in 1808, one that has surpassed this their great prototype; or even connected in so clear and philosophical a manner the morbid alterations of structure disclosed after death, with the antecedent operation of morbid causes and the modifying effects of remedial agents, so as to deduce from the whole a body of doctrine in the true spirit of the inductive system, as is every where exhibited in the work before us? Let us go one step further. The physiological doctrines, based, as all must admit, on a knowledge of the healthy and morbid structures of the system, and the influence which external and internal stimuli exert on the various condition of these structures, are in truth intimately connected with the progress of pathological anatomy, and must eventually give to such researches what they shall actually possess of practical value; however the anatomical pathologist of the present time may disclaim the connection, and pretend to build up a system of science on anatomical characters wholly devoid of theoretical deductions. Although many of the works of this class have largely partaken of this spirit, they all exhibit, in a greater or less degree, the influences of prejudice and early preconceptions. Let us recal, in a cursory way, the characteristic features of some of the most eminent, and examine how far they have advanced the science in deviating from their great model.

The immortal work of LAENNEC's, it must be confessed has greatly advanced our knowledge of the diagnosis of diseases of the chest, still the spirit of his

investigations tends, in our opinion, to give a vicious direction to the study of pathology, by viewing too exclusively the organic lesions as constituting the essence of the disease, without duly appreciating the various agents that have modified these alterations in their progress, from their incipient condition to their fatal termination. Such a mode of investigation is very far from justly estimating the effects of irritation, with their attendant consequences, as first pointed out in the work before us, and still more fully developed in Broussais' later productions. Even ANDRAL's *Clinique*, containing an immense collection of valuable facts, every where exhibiting persevering research, sagacity of observation, and untiring minuteness of detail in tracing out and displaying the morbid alterations induced, is yet extremely defective as a doctrinal exposition of the science. We rise from the perusal of its numerous cases, conscious of having travelled over an immense field, rich with the fruits of actual observation, but unable to apply its stores to the daily occurrences of practice. The author has endeavoured to execute the work in the exclusive or pure spirit of empirical observation, without allowing himself to be swayed by the opinions or principles of any system or doctrine whatever, either in drawing up the individual cases or in afterwards grouping the whole in conformity with any such previous views; and we are free to acknowledge that he has executed this determination with entire success. Consequently, his facts and observations stand out, separated and detached, in a great measure, from each other, bearing no constant and close relations with the vital laws of the economy, and indeed as a whole are insusceptible of being formed into a system of principles for future guidance in the observation and treatment of diseases. Volumes of such works would doubtless greatly add to our already accumulated mass of valuable but sterile facts, without, however, contributing in any material degree to the advancement of scientific, or what we esteem synonymous, systematic medicine, by extending our knowledge of the laws which regulate the vital operations in health and disease.

If such be the errors of two of the most eminent and successful of the anatomico-pathological school, how much more is there to object to most of the others. CRUVEILHIER, who perhaps deserves to be placed in the first rank of this class of physicians, is more exclusively a pure pathological anatomist than Laennec himself, and can hardly be considered, in the ordinary acceptation of the term, a cultivator of pathology. His second performance, the *Médecine Pratique*, however, exhibits less of this fault, and deserves to be placed among the valuable contributions of modern pathology; whilst the splendid work now in progress displays rather the talents of an able anatomist than the reasonings of a profound pathologist.

LALLEMAND's most excellent treatise, a work unrivalled on the pathology of the brain, although it was drawn up for the most part from the cases and practice of others, whilst the author was as yet a student of medicine, is too evidently the result of his adoption of the physiological doctrines as inculcated in the *Chronie Phlegmasia*, *Examination*, and other productions of that school, to allow us to class him with the anatomical pathologists. Yet he himself seems unwilling to merge his professional character under the overshadowing influence of the great reformer, and would be considered as advocating no particular system of doctrines. Such feelings may be praiseworthy in themselves,

calculated to advance the general interests of science, and we do not complain of them, but while we accord unqualified praise to the work, as one of the most valuable contributions of the age, we must not be unmindful of the genius that presided over its execution, and has substantially given to it that which has placed it in the very first rank of contemporary productions.

Passing by BAYLE, SERRES, OLIVIER, BERTIN, with many other authors of excellent monographs, as well as the whole host of writers acknowledging themselves to be the adherents and favourers of Broussais' system of doctrines, we will barely mention GENDRIN, BILLARD, ROSTAN, TACHERON, BRESCHET, GEORGET, LOBSTEIN, and BRETHUNNEAU as furnishing valuable additions to our stock of pathological knowledge under the best influences of the principles of the physiological medicine, without at the same time avowing themselves the advocates of its peculiar tenets.

In this long list of the authors of the anatomico-pathological school, we have omitted the name of LOUIS, because we have nothing to object to him on the score of his mode of investigating disease, and moreover his labours are sufficiently distinct to deserve to be considered apart from the sect which claims him as a collaborator. Louis is, if possible, less of a theorist than Andral in his *Clinique*, for there is no want of that quality in his *Précis*, yet the rare talent of discrimination with which the different morbid derangements are analyzed, referred to their respective origin, and the collective cases of each disease grouped by their analogous symptoms, all naturally tend to give to his researches a systematic form, and a practical usefulness which we may in vain seek for in the writings of Andral, or indeed of any of the disciples of this school. After the work now under notice, we know of no modern French production so worthy of being translated into our tongue as the *Recherches Anatomico-pathologiques* of Louis, and his work on typhus and other malignant fevers. They seem to us calculated to be of more immediate service than any of the productions of the physiological school. They certainly possess this advantage over any of the writings of that obnoxious sect—they have not been judged and condemned unheard, and all classes, both practitioner and student, would willingly draw from their abundant treasures many excellent practical lessons, without the apprehension of being contaminated at the same time by medical heresies.

In thus passing in rapid review some of the many works that have felt the happy influences of the History of the Chronic Phlegmasiæ, let it not be thought that we have lost sight of the work under consideration. We deem its effects in that respect to have been highly important, and that its example will be still felt in the further progress and improvement of the science. Besides, it cannot be expected that we should at this late day make a critical examination of its principles and peculiar doctrines. The high encomiums that were passed on the work on its first appearance, in 1808, have never been called in question, even by the staunchest opponents of the physiological medicine, although all the other productions of the author have given rise to a violence and acrimony of controversy that is unexampled in the annals of the profession. We refer, therefore, the reader to its pages for what he will find well worthy of his study and meditation, with simply remarking, that it was in this work Broussais first called the attention of the profession to the great and important truth, that there was a numerous class of obscure diseases with ano-

malous symptoms, which were considered to arise from debility and languor of the system, or some vice or vitiation of the habit, and for which stimulants, under the designation of tonics, antispasmodics, resolvents, deobstruents, &c. according to the particular theory held and the supposed nature of the case, were universally lavished, to the inevitable injury of the constitution and the frequent fatal termination of the disease. That, on the contrary, all these cases arose from and depended upon an inflammatory irritation of an obscure and chronic character of the digestive or respiratory organs, and that they required for their removal the avoidance of all irritating agents, and the employment of depletion, antiphlogistics, emollients, diluents, or appropriate revellants, according to the seat and force of the ailment, and other attendant circumstances. When we consider the benefits that have arisen from the propagation of such views in the treatment of dyspeptic cases alone, we shall not hesitate to place Broussais among the great benefactors of the age, although he had never given to the world the physiological medicine. The prodigal use of stimulants in these cases had been so ancient, universal, and deep-rooted, that it required, in order to meet the question properly, to inquire into and scrutinize the cause of these derangements, the modifying operation of agents on their progress, and to ascertain the nature of the lesions left after death. All this Broussais has done in an able manner, and so far definitely established his principles that no one has endeavoured to refute them by resorting to the same inductive method. The doctrine of the inflammatory origin of tubercles, wherever seated, has encountered more opposition; still, whoever shall dispassionately examine the facts and arguments on which this opinion is founded, must admit that inflammation has much more to do with their production and ulterior changes than either Bayle or Laennec are willing to allow. Moreover, the doctrine of their inflammatory origin is calculated to lead us to place confidence in such hygienic and remedial measures as experience has proved to be of most avail, where our resources at best have heretofore done so little.

We here close our brief remarks, satisfied, if we should be successful in giving our readers as high an opinion of the work as we ourselves entertain of it, we would thereby render a better service than if we had endeavoured to compress its prominent doctrines within the limits of a review. C. D.

New York, September, 1831.

XIII. *Descriptio Ichthyosis Cornear Congenitæ in Virgine observatæ, tabulis tribus lapidi incisio illustrata.* BREMÆ. CHR. HELV. SCHMIDT, M. D.

Description of a Case of Congenital Ichthyosis Cornear, observed in a Young Girl; with three Lithographic Plates. By CHR. HELV. SCHMIDT, M. D. Folio, pp. 15. Bremen, 1830.

Frances Kroone, the subject of this case, was born in the town of Düstedt, in Holland, a short distance from the Rhine. When seen by Dr. Schmidt, she was twenty-two years of age; her face was perfectly free from every organic defect, and quite comely; her complexion was fair; her skin soft and thin; her eyebrows and eyelashes yellow, dense, and well-formed; her teeth sound and handsome.

The disease first made its appearance at the origin of the sterno-cleido-mas-

toid muscles, under the form of scurf. The upper portions of the breast and neck not so well covered by the dress, were unaffected by the disease, which was likewise the case in the axillæ, where there was a scanty covering of hair; but on the areolæ of each mamma were to be seen very dense excrescences, arranged in concentric order, and from the inferior part of the breasts the ichthyosis, which was of the simple species, however, at first, covered the whole body, save a place which was but partially affected at the umbilicus, and a few spots upon the back. Numerous small, very dense scales, one or two lines in height, and seated in the skin, covered the whole abdomen, back, nates, feet, and arms, as well as the palms and soles; and the head itself was not entirely free.

On each of the extremities were to be seen firm, horny corpuscles, mingled with some hairs, three or four lines, or even more, in height: one was two or more lines broad, and to appearance squared by rule, some were round, and others again in the form of an inverted cone: the stems of the latter were connate in patches of three or four, and impaired in various places the appearance of the checquer work. Between the digital members of the hands and feet, and at their extremities, these horny crusts were broader: partly from the compressions they experienced, and partly from a thicker concretion, on account of the greater sudorific discharge of these parts.

The configurations covering the palms of the hands were extended to the arms, where they were even more numerous and thick, though the lineaments of the arms could still be traced. But the feet and legs were so surprisingly deformed as to render an accurate description very difficult. Upon the extremities of all the phalanges, the disease was likewise to be seen, through which the redness of the subjacent parts appeared. But the feet and especially the right one, were completely sheathed, and the scales were very large and thick on the sole of the foot; some nearly an inch long, and as much elevated; some of the colour and texture of horn, and others of an ivory appearance: there was likewise a great variety in their form.

But the disease did not only invade the epidermis, it attacked the nails of the fingers and toes, which were subjected to similar changes. Those of the fingers were thick, short, rigid, and cloven; the lamina of which they were composed were distinctly seen; their *lunula* of the nails was effaced. Their colour was of a pale yellow, nearly resembling burnt horn: the extremities of the phalanges were pointed. The nails of the toes were thicker than those of the fingers and narrower than usual, composed as it were of horny tubercles, curved upwards, and of irregular form, since as the inferior stratum of the nail was unimpaired, they had elevated a part of the superior surface of the plate.

The head itself was not free from this covering. The whole anterior part of the scalp was covered with large sessile scales, which, just at the margin of the forehead, were separated by a narrow tract of mingled yellow, white, gray, and black hairs, chiefly diseased, which at the occipital portion of the head were collected into a fasciculi of the same kind, six or seven inches long, between which, however, the disease was similarly conspicuous. But these few hairs were said to have only been produced by the greatest care and diligent washing, when the g'rl had desired to cultivate them for the improvement of her appearance.

The colour of this crust upon the scalp was light yellow, but of a whitish cast, dirty or pulverulent at the upper part of the back, *mammæ*, and surrounding parts, and of a dark leaden hue at the inferior part of the abdomen and back, at the haunches and legs; upon the hands and feet it was of a dirty-yellowish brown and olive hue.

Besides these peculiarities, the whole of the thorax was covered with a singularly loose and peculiar skin, which in some places, where the skin covered the bones only, as at the elbows and knees, formed singular *rugæ*; in other places, as for instance over the *glutei* muscles, it composed not less than sixteen or twenty regular semicircles. The rugosities of this diseased skin were so far peculiar to it, that when an attempt was made in the neck or places less affected by the common disease to enclose a portion between the fingers, innumerable *rugæ* were immediately formed, which was not the case a few inches above in healthier places, or where there was a greater abundance of fat.

But the diseased skin, in places deprived of this covering, appeared dry, harsh, and redder than elsewhere. The corpuscles were firmly adherent, as if rooted in the skin, and bled when torn off by force, though when the hard mass was seized with the forceps, they could be removed without pain. When this was done, a minute, (central,) style of a line in bulk was seen, whitish and softer than wax, which, however, when exposed to the air, was quickly hardened. These hard crusts were chiefly, and especially upon the arms, of a polished appearance, and emitted a noise when they came in contact with hard bodies.

Such is a succinct description of the affection, as observed by Dr. Schmidt in this unfortunate girl, of which M. Alibert has thus spoken in the *Dict. des Sciences Medicales*: "I question whether such a remarkable phenomenon will occur again in the course of ages," &c. She was the third child of a family of four, the parents of which had been some time dead. Her father was a painter. The two brothers and a sister, which composed the rest of the family, were never in the least affected with this disease, nor are their children.

The disease early made its appearance upon the skin of this female. It was observed, in fact, by the accoucheur, four or five days after birth; the skin of the infant presenting a hoary appearance, not removeable by ablution. Her mother likewise observed it, when she had recovered from her indisposition, and attributed it to the neglect of proper cleanliness, and many remedies were immediately applied, but without any effect. Finally, with the superstition common to such persons, in the absence of palpable causes for any particular event, she attributed this affliction of her child to her having fallen into a lake, when pregnant with her and in perfect health, and her being taken sick immediately afterwards, after she had remained a long time upon the trunk of a floating tree.

The diseases to which she was subsequently exposed in her infancy were measles, scarlatina, varicella, and variola; the three first were light attacks, but the last affected her severely, and aggravated for a long time the congenital disorder. None of the variolous cicatrices were visible any where upon the skin, nor in any of the different periods of desquamation did she profess to have been entirely free from ichthyosis. She was also for a few days affected with icterus. There was some stiffness of the fingers of the right hand, and a difficulty in extending them, which she attributed to an inflammatory swelling she

had experienced at the elbow joint; in which there was some similarity, not perhaps entirely fortuitous, with the well-known case of John Lambert, who had little controul over the motion of the right hand, as was remarked by Thilesius, who attributed the cause to his having at too early an age been made to carry the weapons of the hunters.

Frances Kronne at eighteen commenced to menstruate, which she subsequently continued to do at the usual period, and in large quantity. She was not subject to any peculiar diseases and enjoyed good general health. She was more affected by cold than persons are usually, fond of a high temperature, and felt better in summer. In winter she was much annoyed by the coldness and dryness of the winds: when these prevailed, the fissures upon the feet would gape open, so as to admit a finger, and sometimes discharge blood. She perspired spontaneously over the whole body, but especially in the arm-pits. During the cold season, she was obliged oftener than is usual with others to pass her urine, which however was nowise peculiar. Desquamation took place to more extent at the vernal and autumnal equinoxes than at other periods.

The crust upon the hands was not so much of an incumbrance but that she was able to use them in washing herself, and many other manipulations; latterly she had learned some artificial employments, and was able, with her eyes shut, to distinguish by the touch, metals, silk, paper, &c.

Her face and thorax were well formed, and appeared to indicate the same condition of the body: which, however, was not the case. For the extremities were emaciated, and there was great deformity resulting from an inclination of the pelvis, that made the glutei appear thicker and more monstrous, thereby rendering the defect in the legs below, so much the more conspicuous. Indeed, the inclination was so great, that it more than the diseased condition of her feet, rendered her gait vacillating and uncomfortable. Walking likewise excited pain at the acetabula.

Such, at least, are the material facts which, during the few days she remained in the city of Bremen, were gathered respecting this interesting case, by Dr. Schmidt, partly from observation, and partly by inquiries from the individual herself.

Simple ichthyosis, though a disease occasionally occurring, is almost unknown in Germany. This disease was termed by Dr. Schmidt a case of *Ichthyosis cornæ*, and apparently with good reason, for upon other parts of the body, as well as upon the palms of the hands and soles of the feet, there were morbid productions of a horny nature.

Ichthyosis has been considered by writers, viz. Thilesius, Alibert, Martin, &c. as an hereditary disease, occurring generally in the first two or three months of existence; in this individual it was observed four or five days after birth.

The hereditary nature of ichthyosis was conspicuous in the Lambert family, all the males of which, but none of the females, were affected for three generations. Many cases exist to prove that it is not always propagated by diseased parents to their children, some escaping in the same family, while others were affected. There is proof also in the history of some females, as described by P. J. Martin, of its hereditary nature, in which it was transmitted from a mother to her daughter. It is stated by Rayer, that a man named John Brayer, and his brother, both sons of a diseased father, laboured under general ichthyosis, while

their sisters, and their sisters' children, were entirely free, so that there is direct evidence of its having been transmitted from father to son, and from mother to daughter; this at least has been the case in simple ichthyosis, as experience has taught.

The causes of ichthyosis is as yet unknown. It is supposed by Alibert, with some little tincture of the prejudice of the vulgar, that in maritime places, and along rivers where fish abound, the system, by being fed from their products, may be disposed to this disease; though he afterwards more courageously asserts "that the causes of this disgusting and detestable disease is totally unknown." This supposition of M. Alibert, which is not wholly without supporters, may perhaps, with those fond of the marvellous, find an increase of support, from the fact that the mother of this girl, was, while pregnant with her, exposed in a lake upon the floating trunk of a tree, to the malignant glances of the watery basilisks. It is perhaps a sufficient trial of our credulity to attribute this intra-uterine derangement, (as others of an analogous nature are,) to the mental anxiety and dread of the mother, acting through the sympathetic nerves, which prudently observes Dr. Schmidt, he will neither admit nor gainsay. There now exists well-authenticated instances of sudden and surprising changes on the surface of the body from moral emotions, such as the turning the hair from black to gray in the course of a few hours, and similar effects in the rete mucosum. Where we cannot explain, it is safer and more manly to admit our ignorance, for then at least the road is open to improvement.

Ichthyosis has by most writers been considered an affection of the epidermis only, though Thilesius considered it to consist in a morbid state of the sebaceous follicles of the cutis. Dr. Schmidt, for the following reasons, is disposed to coincide in opinion with the latter: partly because he has seen some of these horny tubercles occupying the site of these follicles, and partly because when they were carefully extracted, an elongation, having the appearance of a root, appeared to come from the follicles themselves. Besides, as the epidermis is a production of the subjacent rete Malpighi, any cause producing a morbid secretion of this structure, would give rise to an unusual epidermis. From this cause, the whole skin was affected in the case which forms the subject of this treatise, and there was in support of this opinion, an unusual deficiency of fat over the whole body, and especially in the diseased parts, which produced perhaps the looseness and rugosity of the skin. However this may be, the secretion of the epidermis was changed both in quality and quantity. Admitting that these horny bodies consisted in induration of the epidermis, still the sudden and peculiar hardening, and the great mass of the secretions, indicates such derangement of the *visus formativus*, as to confirm the opinion of the hereditary nature of the disease.

These substances were chemically very analogous to the horn, hair, and shells of animals.

That Frances, observes Dr. Schmidt, whose skin was thus covered, sweated freely over the whole body, appears to be owing to the peculiar pores lately investigated by Thomas Gordon Blake. In some places where no crust was found, the author is disposed to attribute the cause, to the profuseness of the sudatory discharge. In the same way he likewise accounts for the absence of the scales in the palms and soles of the Lambert family. Such, too, is nearly

the opinion of Thilesius. In all the cases above referred to, no crusts were found in the axillæ, which were attributed to the same cause, copious discharge of sweat: which the girl admitted was very abundant there, as was likewise demonstrated by the hircine odour, and effects upon the vestments of the part.

All the writers upon this disease assert that the individuals affected with it, though possessing a tolerable proportion of health, were nevertheless subject to rachites from their birth.

In lighter cases of ichthyosis, and especially in infants, there is, in the opinion of Dr. Schmidt, more or less of the scrofulous diathesis present, and many of which are affected with *crustæ lactææ*, but in all which cases he likewise observed a dryness and rugosity of the skin, as well as secretions analogous to that of ichthyosis upon the skin of those labouring under atrophy, tabes, and dropsy, which appear to arise in a similar way from the lack of fatty matter peculiar to this disease, and to disappear when it was restored to the skin.

Whether or not, the extreme emaciation of the extremities in this female was owing to an affection of the whole lymphatic system, and to which the disorder of her general health was to be ascribed, it is not possible, from the observations given, to decide. The peculiarly melancholy expression of her features, is, however, well deserving of notice, a circumstance which Alibert asserts is not only always an attendant upon ichthyosis cornea, but likewise aggravates the disorder so much that stupidity may be the result, in consequence of the continued contemplation of their deformity and their gloomy prospects for the future.

In regard to the colour of the crusts, much appears to depend upon the sex of the patient, and the peculiarity of location. "For why," it is asked, "does it appear darker upon the abdomen of the female, which is covered with clothes, than upon the hands and feet, always subject to exposure?"

Dr. Schmidt likewise noted a singular and peculiar slimness of the first digital phalanges, in this female, of which, however, he has seen traces a few times in other diseased affections of the skin. In regard to this fact, he asks, "Whether it is to be considered as an indication of the severer cutaneous diseases, as, on the other hand, a thickness of the phalanges is noticed in those labouring under diseases of the heart and lungs?"

Three very well executed plates accompany this case. The first exhibits the whole person, the second the hand and fore-arm, and the third the foot, the two last are of the size of nature. Dr. Schmidt's publication constitutes an interesting addition to our science.

J. P.

XIV. *Directions for making Anatomical Preparations, formed on the basis of Pole, Marjolin, and Breschet; and including the New Method of Mr. Swan.* By USHER PARSONS, M. D. Professor of Anatomy and Surgery. Philadelphia, Carey & Lea, 1831.

Perhaps no single circumstance serves more to distinguish the state of medical science at the present period, than the increased attention to healthy and pathological anatomy. While physiological medicine rejects all symptomatology, which does not consist in an accurate knowledge of the connexion between the appearances of disease and the actual condition of the part affected, it renders

necessary a more accurate acquaintance with the normal state of all parts of the system, as it founds its high pretensions upon the revelations received from extensive examinations of diseased organs in every stage, and under all the various circumstances of morbid action. The necessity and importance of frequent post mortem examinations are gradually acquiring the sanction of public opinion; so that among the enlightened, permission is now seldom refused to him who would investigate the cases of rare disease and sudden death, which occur in private practice; while in large cities the infirmaries and hospitals afford to the metropolitan practitioner the most ample opportunities for the prosecution of pathological anatomy. But the pursuit of practical anatomy, with a view to a minute acquaintance with the structure of the human body, requiring patient and protracted dissection, mutilating, and destroying the subject, has still to contend with public prejudice. And, although in most of the medical schools in this, and other countries, little difficulty is now experienced in procuring the necessary subjects, the appeal of the whole medical profession of Massachusetts is still sounding in our ears, and the *self-devotion* of the members of one of the most distinguished surgical colleges in Great Britain is still fresh in our remembrance. Little, however, does it avail the great body of surgeons who are scattered among our villages and throughout the country, that dissection is readily prosecuted in our large cities. Too often they are compelled to undertake the most important operations, depending solely upon the recollection of their anatomical labours when students, and occasional references to text books and plates. Since the establishment of the principal medical colleges in our country, probably few leave them to enter into actual practice, who have not prosecuted practical anatomy, and prepared many pieces of dissection, which, if preserved, would have been invaluable to them in after life. In many places where practical anatomy is taught, the art of making and preserving preparations has been but too little considered; and although some instructions are appended to many of the manuals of dissection which have been published in this country, the American press has produced no systematic treatise on the subject but the work now before us. Since the time of Ruysch and Munro, the art of making anatomical preparations had undergone but little improvement, until within a few years the labours of Dumeril, Breschet, Marjolin, Cloquet, Bell, Pole, and Swan have brought it to its present state of perfection.

Without making much pretension to originality, a claim which the very nature of the subject forbids, the work of Dr. Parsons, uniting the result of the individual labours of all his predecessors, with his own experience, is decidedly the best treatise on the art which we have seen. In the introduction, are contained some valuable remarks upon the economy of dissecting rooms, and the process of dissection, with practical observations on the diseases consequent to wounds produced by instruments when charged with some morbid matter present in the subject. Too often these cases are neglected entirely, until the occurrence of severe pain, tumefaction, and febrile excitement call urgently for relief. To meet these circumstances, the treatment recommended by Dr. Parsons is highly appropriate; but in considering the cure, the Dr. has omitted what we consider of even more importance, the prophylaxis. It may appear to be an unnecessary and timid precaution, but from considerable observation, we are convinced that if the wounds received in dissection were immediately

subjected to strong suction by the mouth, and carefully washed with soap and water, recommended by the late Dr. Godman, we should have no more of these fatal cases; and when the subjects have died of inflammation and suppuration of the serous membranes, we think it should never be omitted.

From the nature of this work, consisting as it does, of plain and practical details, it scarcely will admit of an analysis. Beginning with the ordinary mode of making injected preparations, we have in succession all the different forms, cerated and mercurial, dry, wet, and corroded. The difficulty of filling the minute veins of the extremities with coloured injection, has always been acknowledged, and the attempt has been almost abandoned. The ordinary mode of injecting these vessels with mercury, with the ingenious contrivance of our author for obviating the opposition presented by the valvular structure of the veins, and thus filling the extreme vessels with common injection from the large trunks, we shall give in his own words.

“SECTION XX. *Injection of the arteries and veins of the hands and feet, with coloured injection for dissection and corrosion.*—These preparations have, I believe, never been made by any one but myself. Quicksilver has long been used for filling such veins, by supporting a column of it for some days in an artery going to the hand or foot, and then twisting a cord round the wrist or ankle, and drying and planting the preparation in a pedestal of wax or plaster of Paris, with the fingers and toes upwards. Such a preparation exhibits the superficial vessels very beautifully, and especially the nourishing arteries in the roots of the nails. No coloured injection has, however, within my knowledge, been made of the veins of the fingers and toes, that will admit of their dissection. Proceed in this as in the foregoing case, more particularly described in section 56. When the arteries and veins are filled to running over, insert a pipe into one or two of the largest veins, and without tying the cord, let the part dry as soon as practicable; then shave a thin portion from the ends of the thumb and fingers or toes, and let the quicksilver run out from them, and also from the pipes by inverting the part. Then inject the arterial pipes with coarse cold red injection, and the venous pipes with yellow, white, or dark blue, continuing the pressure till the injection appears at the ends of the fingers. Pass a cord round the wrist and immerse the part in tepid water for a day or two, to restore the softness, so as to admit of dissection; or if the object be to make a corroded preparation, macerate for some months, and wash away the soft parts by a stream of water directed upon it, as described in directions for making natural skeletons of small animals. The obstacle that has hitherto presented itself to injecting the veins of the hand and foot, is their valves. But here the quicksilver, by its upward pressure, if continued till the valves are dried, throws them open, so that the injection flows contrary to the current of the blood, with perfect facility.”

In connexion with the subject of wet preparations, we cannot forbear to advert to the method of preserving the natural colours in specimens of morbid anatomy, as quoted by our author, from an essay by Mr. Gaskoin, in the *London Medical Gazette*, for 1828. When on a visit to New York last summer, some morbid specimens in the cabinet of one of the most eminent surgeons of that city, prepared in the manner above alluded to, were submitted to our inspection, which retain their original colours and appearance in a remarkable degree.

Besides directions for all the various preparations of actual anatomy, we find the methods of modelling in plaster extracted from Pole; and a useful chapter on the preservation of subjects of comparative anatomy. In short, we consider the appearance of the work before us, as most opportune, at a time when the

facilities of practising dissection and obtaining specimens of pathological anatomy serve to render it peculiarly valuable. We therefore recommend it to the student and practitioner, as the best exposé of the present state of the art of making anatomical preparations, and hope that it will be found in every dissecting room, and in the hands of every one engaged in post-mortem examinations.

With regard to the execution of the work, consisting as it does of plain practical details, we can bestow no greater praise, than to say that the descriptions are for the most part clear, concise, and intelligible; but with respect to the typography, we are sorry to observe many errors, which, though not important in themselves, would not have escaped a professional corrector of the press.

T. C. D.

XV. *A Manual of Medical Jurisprudence, compiled from the best medical and legal Works, comprising an account, 1st, Of the Ethics of the Medical Profession; 2d, The Charters and Statutes relating to the Faculty; and 3d, All Medico-legal Questions, with the latest decisions: being an Analysis of a course of Lectures on Forensic Medicine, annually delivered in London, &c. &c.* By MICHAEL RYAN, M. D. &c. &c. London, 1831. pp. 309. 8vo.

We have so often in our preceding numbers called the attention of the profession to a branch of study, but too generally neglected in this country, and to the benefits resulting from a competent knowledge of its principles, that it would be superfluous to again repeat the arguments we have adduced in its favour. We have, however, been so much pleased with Dr. Ryan's work, and so well convinced that it is calculated to fulfil the intentions of the author, that we cannot forbear again soliciting the attention of our readers to this important subject. The main object of Dr. Ryan has been to afford the greatest quantum of information in the smallest compass, and in the most familiar manner, or in fact to simplify the subject as much as possible so as to render it intelligible to every class of medical practitioners, as well as to gentlemen of the bar, jurymen, and even general readers. This task the author has executed in a satisfactory manner, and although we do not agree with him in some points, we are acquainted with no work on medical jurisprudence that presents so much valuable information in so condensed and yet so clear a form. Dr. Ryan has freely availed himself of the labours of his predecessors in this department of knowledge, and we are glad to see the high estimation in which he holds the opinion of our countryman, Dr. Beck; who, to use Dr. R.'s words, and which must be echoed by all who have studied the "*Elements of Medical Jurisprudence*," "is an ornament to his profession, and an honour to his country." It is one peculiar merit of Dr. Ryan's, that he frankly acknowledges his obligations to his fellow labourers in science, and that he never avails himself of the observations of others without giving them due credit; this is so rare in the present book-making age, that we are happy in holding up our authors scrupulous attention in "rendering unto Cæsar the things that are Cæsar's," as an example by which we might all profit.

The work is divided into three sections: the first is devoted to the consideration of the important subject of medical ethics—a subject so intimately con-

nected with the standing and dignity of the profession, that it becomes a matter of astonishment that it has been so wholly overlooked of late years; "there never was a period in medical history in which ethics were so neglected and violated as in this 'age of intellect,' nor the dignity of the science so degraded and disregarded." Dr. Ryan first gives a sketch of medical ethics of Hippocrates and his eminent successors, and the influence they exercised on the profession; he then gives the ethics of the middle ages, which are followed by a consideration of those of the present day, as laid down by Gregory, Percival, &c. These chapters will amply repay an attentive perusal, and if the precepts contained in them could be universally adopted, it would save us from the pain and disgrace of witnessing those constant squabbles among members of the profession which tend so powerfully to depreciate its standing with the public.

The two next chapters relate to the laws of the medical profession which are in force in Great Britain and Ireland; many of these being mere local enactments, possess but little interest to the American reader; others, however, depending on common law, are equally in force in this country, such as the liability of witnesses, &c.

In the next chapter Dr. Ryan begins the discussion of questions of medical jurisprudence, by such as relate to disqualifications for marriage; these are either physical, moral or accidental, and the author justly deduces the following general principles, "1st, That to declare either sex impotent, it is necessary that certain physical causes be permanent malformations, or accidental lesions, evident to our senses. 2d, These causes when rigorously examined, are few in number. 3d, The moral causes ought not to be taken into consideration, as they would serve as an excuse for an individual accused of impotence." The chapter on pregnancy which succeeds, though short is clear, and the positions well laid down. Dr. Ryan appears to agree with Kennedy and others, that auscultation is the only infallible test of pregnancy. The next points discussed are those of abortion and delivery, on which as may be supposed, nothing new was to be said. In chapter XI. the author enters on the difficult subject of infanticide; with this part of Dr. Ryan's work we have not been as well satisfied as with the others, it is too short, and does not point out with sufficient clearness the numerous fallacies attendant on all the proposed tests of the life or death of the infant; in this part of his work he has made ample use of Dr. Beck's treatise, and which he appears to consider as the highest authority on the subject.

The chapter on rape deserves attention; Dr. Ryan has adopted the opinion now beginning to be generally held, that there are no positive signs of virginity, as physical proofs are equivocal and may all be wanting, without giving rise to a well-grounded suspicion against the female.

The author next discusses those medico-legal questions, that relate to attempts against health or life. This is done clearly and perspicuously, though we think he has omitted some important facts that might have considerable influence on our decision. The observations on homicide by asphyxia, in which the author includes hanging, submersion, the introduction of foreign substances into the trachea, and the effects of the non-respirable gases, of course contain little that is new: those, however, on the poisons are excellent, and present a condensed view of all the recent information on the subject. We are glad to

see that Dr. Ryan makes such constant reference to the work of Christison, certainly the first authority on this intricate subject that we possess, and one that we are astonished has never been republished in this country.

As respects the chapter on adulterations of alimentary matters, we must confess that it has always appeared to us that they are of much less importance than is usually attributed to them: notwithstanding it is now many years since Accum proved that death and disease lurked in every mouthful that were swallowed, we do not find that mankind have been more cautious, or that they have materially suffered from their neglect of his peptic precepts. The adulteration of medicines is of much more vital interest, and we know that it is practised to a very great extent, not however, to the degree which Dr. Ryan states occurs in England; where he says it is almost impossible to procure a single article in the Pharmacopœia in a genuine form. His remarks on the state of charlatanism, we are sorry to admit, are but too applicable to this country, "where the most ignorant and illiterate persons are allowed, with reckless indifference, to assume the titles and privileges of educated medical men, to the destruction of human health and life." What encouragement is held out to the regular physician who has sacrificed health and property to the study of his art, when he finds himself superseded by some inspired pretender; when he sees the preparations of an illiterate nostrum-monger, recommended to the world under the sanction of some of the highest names in the profession? "But unhappily," says an able writer, "it appears that John Bull and his family are not gifted with the power of being beware of hypocrisy, advertising charlatans and empirical nostrums; but through their proneness to gullability and love of the marvellous, the trade of quackery is daily increasing, and some hundreds of quacks swarm in every corner of the metropolis, and fatten on the murders which they are constantly perpetrating with their poisons." These remarks, though intended for London, are but too true of every large city in the United States, where wholesale quackery is full as rife as in any part of the world.

The next chapter on mental alienation, although very short, contains a valuable summary of legal decisions on this intricate medico-legal question. The shades and degrees of insanity are so various, and the definition of insanity as given even by the best authorities so vague and discrepant, that there are no cases in which a medical witness is called on for his opinion, that demand more circumspection and close observation. In fact, as is observed by Mr. Amos, "the degree and kind of insanity, which renders a person responsible for criminal acts, is a subject upon which it is impossible to give precise and scientific notions."

The chapters on simulated and disqualifying diseases are much too brief to be of much service. When a medical man is called upon to examine individuals supposed to be labouring under certain diseases, the existence of which would exempt them from certain public duties, or screen them from merited justice, he would grossly violate his obligations to the public, if he impeded the administration of the laws; in these cases he is not to be influenced by mere humanity, but is bound to give a correct decision according to the best of his skill and knowledge.

The last chapter on medical evidence is very valuable, and though not equal to Dr. Smith's Treatise, will amply repay an attentive perusal.

In the foregoing short analysis of the contents of Dr. Ryan's volume, we have merely wished to apprise our readers of its contents, and the plan on which it is arranged; neither time or space have permitted us to enter on a review of the author's opinions, nor to dilate on the various questions of which he treats. An American edition of it, with such additions and alterations as may be required to adapt it to the jurisprudence of this country, would, we think, be a valuable addition to our medical and legal libraries: not as a substitute for the more extended work of Dr. Beck, but as a *catalogue raisonné* of the various questions in which jurisprudence calls on her sister science for elucidation.

R. E. G.

XVI. *Medico-Chirurgical Transactions.* Vol. XVI. Part II. London, 1831. pp. 236, 8vo.

The portion of the sixteenth volume of the Transactions of the London Medico-Chirurgical Society, now under notice, comprises eight articles, all of which are more or less interesting. The first is an elaborate essay on omental hernia, by JOHN MACFARLANE, M. D. of Glasgow. The omentum enters into the formation of nearly all the varieties of hernia, but from its position it is less frequently met with in those which pass out through the inferior apertures of the abdomen or pelvis. It is more frequently encountered in umbilical than in inguinal, and in inguinal than in crural hernia. As it descends lower in the left than in the right side of the abdomen, it escapes more readily through the left inguinal opening than through the right; Dr. Macfarlane thinks that three-fourths of the cases of epiplocele are in the left groin. In some rare cases the omentum has escaped on both sides in the same patient, and in the same side it has been found to protrude through both inguinal and crural openings.

This disease occurs more frequently in advanced than in early life; the omentum in the latter period being small; Dr. M. has, however, seen three cases of congenital rupture in very young children, in one of which the tumour appeared to consist wholly, and in the other two, partly of omentum.

Epiplocele is less dangerous, and is usually attended with less urgent and alarming symptoms than intestinal rupture; nevertheless, in strangulated omental hernia the symptoms are often extremely severe, and Dr. M. is of opinion that it requires a more active and prompt treatment than seems to be followed by the chief surgical authorities of the present day.

The omental seldom attains the magnitude of an intestinal rupture; the enlargement of the tumour in the latter depending upon the repeated escape of new portions of bowel, while in the former it is more frequently to be attributed to the morbid enlargement of the displaced part. When the tumour is composed wholly of omentum, it usually presents an uneven surface, has a soft, doughy feel, and wants the tension and elasticity of enterocoele.

“When the tumour is small, recent, and unchanged in structure, it is often ill defined; and when in this state, it occupies the situation of the inguinal opening, it is apt to be mistaken for a partial enlargement of the spermatic cord; and even in an old irreducible epiplocele, the tumour sometimes presents externally a smooth and polished surface, with the tension, and other characters of an intestinal rupture. This is especially observable when the sac is distended with fluid; but even when this complication exists, we shall seldom fail, unless

the tension be very great, in recognising the hard and irregular omentum through the interposed fluid. The same uniformly smooth surface is occasionally met with, when the omentum contained in the sac is not consolidated, or otherwise morbidly changed, but is simply enlarged, from hypertrophy or obesity. Here, however, the absence of tension and elasticity, and the peculiar flabby state of the tumour, will render the diagnosis comparatively easy.

"The omentum, particularly when loaded with fat, escapes from the abdomen more readily than the intestines, is reduced with greater difficulty, and requires a stronger spring truss to prevent its reprotusion."

In the employment of taxis for the reduction of epiplocele, Dr. M. recommends the avoidance of all violence or force, the omentum, when too much handled, being liable to be contused and lacerated. Dr. M. states that he has seen one case in which, from continued and powerful efforts at reduction, the omentum was lacerated in several places; and in another, the protruded part was livid and ecchymosed from the extravasation of blood into its cellular texture. The contused omentum, instead of being excised, was, unfortunately, returned into the abdomen, became gangrenous, and produced death.

"On the sudden protrusion of a portion of omentum, especially when it occurs for the first time, we may expect to find the accompanying symptoms extremely urgent. Strangulation may be immediately produced, violent pain in the tumour and abdomen excited, with vomiting, hiccup, and obstinate constipation. In some cases an operation is indispensable, whilst in others the distressing symptoms gradually yield, so soon as free alvine evacuations are procured."

The reduction of an epiplocele may be prevented, according to Dr. M. 1st, by adhesion of the omentum to the inner surface of the body, or neck of the sac. 2d. By enlargement of the omentum from engorgement of its vessels, the return of the blood through the veins being sometimes impeded by pressure at the hernial aperture. 3d. By the part of the omentum which passes through the neck of the sac being compressed into a hard, smooth cord, while the portion in the sac itself remains loose and capable of being expanded. This Pott considered as the most frequent impediment to the reduction of an epiplocele. 4th. From its having undergone a morbid enlargement. Dr. M. has dissected a patient with a large epiplocele of the right side, which had been irreducible for fourteen years; the omentum was so enlarged and disorganized, that reduction could not be accomplished until the inguinal canal was divided for nearly three inches. 5th. An epiplocele may be also irreducible from adipose enlargement of the omentum, without any *morbid* alteration of the affected part, and this enlargement may be accompanied with, or independent of general obesity. General evacuation causes a considerable absorption of the fatty matter of the omentum, so as to greatly reduce the size of the tumour, and occasionally to permit its return into the abdomen.

"In irreducible herniæ of large size, whether intestinal or omental, the patient is not unfrequently subject to smart attacks of colic, with pains in the tumour, after taking a hearty meal. When the rupture consists wholly of omentum, the pain commences almost immediately after eating, but when of intestine the uneasy feelings are longer in appearing, and seem to take place only when the contents of the intestinal canal are passing through the tumour. Besides these symptoms, an irreducible epiplocele is often accompanied by severe dragging or twitching at the stomach, and by repeated vomitings; in conse-

quence of the stomach being compelled to follow the motions, communicated to the *fixed* omentum, by the intestines and abdominal muscles. These symptoms are also most urgent after meals, because, from the distention of the bowels, the stomach is pushed up towards the diaphragm, and the omentum put more completely on the stretch, and also rendered more convex externally by the pressure of the intestines."

As the stomach and colon become accustomed to the restraint arising from this unnatural fixture of the omentum, we occasionally find that the urgent symptoms gradually diminish, or even altogether disappear; a result, however, of less frequent occurrence, according to Dr. M. than we should be led to expect from the assertions of writers.

"When the distention of the abdomen is moderate, an irreducible epiplocele may cease to produce any disagreeable symptoms; but when the stomach is full, the bowels constipated, and unusually distended with flatus, or fæces, when much straining of the abdominal muscles occurs, we cannot fail to meet with very distressing symptoms. It is the liability of the abdomen and its contents to great and often to sudden variations in size, even in healthy individuals, that enables us to explain the repeated recurrence of these painful paroxysms. They are generally more urgent when the omentum is suddenly, than when it is slowly, put on stretch; yet even in the latter state, they are sometimes marked and severe."

When an inguinal epiplocele has been long irreducible, the omentum sometimes becomes so altered in structure as to produce, by pressure and irritation of the spermatic cord, a diseased state of the testicle, with or without effusion into the tunica vaginalis.

"When an irreducible hernia is complicated with hydrocele," says Dr. M. "it would appear that the usual expedients for the cure of the latter disease cannot always be safely employed. The similarity of structure and contiguity of the affected parts is such, that when inflammation is excited by injection or otherwise for the purpose of producing a cohesion of the tunica vaginalis, it is liable to be propagated to the omentum or its sac, and give rise to alarming symptoms. It is also necessary to consider, before any operation is proposed, that as a preternatural collection of fluid sometimes takes place in the hernial sac itself, which may present all the characters of hydrocele, great caution is requisite in the diagnosis.

"When the omentum is fixed to the sac by extensive adhesions, or when it is neither inflamed nor irritated, it is seldom that any great accumulation of fluid takes place. Sometimes, however, the sac is so much distended, as to prove an additional source of uneasiness to the patient. Pott was repeatedly obliged to puncture the sac and evacuate the fluid, in order to remove the inconvenience arising from the enlargement and weight of the scrotum: and when this was neglected, gangrene was sometimes produced.

"To distinguish, therefore, between hydrocele complicated with an irreducible epiplocele, and a collection of fluid in the hernial sac, is of some practical importance. In the former, the fluid gradually accumulates in the most depending part of the scrotum, and extends upwards, leaving, as in the above case, a separation more or less marked between the two tumours. But, when the accumulation takes place in the sac, the swelling commences below the inguinal ring, and proceeds downwards, unless the hernia is scrotal, when it will begin in the same situation with hydrocele. We may expect, however, to find, when the fluid is confined to the sac, that the tense swelling is greater and higher up in the groin, and that the irreducible omentum is more completely surrounded by it than in the other form of disease."

It is the opinion of some writers, that when the local symptoms of a strangulated epiplocele are severe, and when they seem to depend rather upon inflammation than on strangulation, an operation is generally useless and frequently dangerous. Dr. M. on the contrary, asserts that an operation, even in these circumstances, may be not only necessary, but even highly successful, and he relates a case, which confirms his opinion. The operation will certainly be more successful when the omentum has protruded suddenly and become strangulated by the immediate pressure of the opening through which it has passed; but even when the disease is of long standing and irreducible, the additional size it requires when inflamed or engorged, says Dr. M. may cause over-distension of the hernial aperture, and produce such painful and injurious constriction that an operation may become necessary. In this state the symptoms are less rapid in their progress, but as soon as the tumefaction of the omentum has advanced to its greatest extent, the pressure at the ring may be as considerable, and the stricture nearly as complete as when directly produced by the escape of a larger piece of omentum than the opening can contain.

Dr. M. recommends, in opposition to Hey, Scarpa, Boyer, Richerand, and other writers, that in epiplocele, the adhesions which the neck of the omental rupture may have contracted with the neighbouring parts should be separated and the omentum returned into the abdomen whenever it is practicable.

“By permitting,” says Dr. M. “the divided omentum to remain fixed to the neck of the sac, a temporary closure of the aperture will be effected, and the immediate descent of any portion of intestine or omentum for a time prevented. But, on the other hand, besides the danger of the intestines adhering to, or becoming entangled with, this fixed band of omentum, there is the risk of a second hernia forming at the same aperture. When the abdominal muscles are called into powerful action, the fixed omentum serves as an inclined plane along which the intestines glide, and by which the impetus will be more effectually directed to the old hernial aperture, than to any other part of the abdominal parietes: and, of course, the risk of a secondary tumour forming, be greatly increased.”*

The permanent adhesion of the omentum to the inferior hernial openings of the abdomen, sometimes also seriously impairs the functions of the stomach and colon, the organs are dragged from their natural position, and instead of these organs gradually becoming accustomed to this restraint, it frequently happens that the symptoms adduced by it daily become more distressing, and continue to harass the patient with increasing severity during the remainder of life. Several cases in confirmation of this are quoted.

Besides, the disorganization to which the irreducible omentum is liable, is not confined to the tumour, but extends into the abdomen. Dr. M. says that he has seen one case and a preparation of the diseased parts of another, in which the omentum within the abdomen, as well as the portions contained in the irreducible ruptures, had lost every vestige of its natural structure, become exceedingly bulky, indurated, and tuberoso, and produced death by exciting ascites.

Dr. M. has found the use of cold, to an omental rupture, by means of ice, snow, or evaporating lotions, more successful in promoting reduction, than other external applications.

* In omental hernia, which have existed for years, a portion of gut not unfrequently escapes into the same sac, and becomes strangulated.

Sir Astley Cooper once succeeded in reducing an omental inguinal hernia, by applying ice for four days. In robust and healthy subjects, Dr. M. says that cold applications may be continued for days with impunity; but when the patient is old and debilitated, their continuance for a few hours may be sufficient to destroy the vitality of the parts. The effects of cold must therefore be carefully watched by the surgeon.

Before returning the cut omentum into the abdomen, Dr. M. recommends that the bleeding vessels be individually secured, with fine ligatures. Sharp and Pott often returned the divided omentum without applying a ligature, and when the excised portion is small, and not materially changed in structure, little hæmorrhage is to be expected; but when its volume is greatly increased, and morbidly altered, the vessels will be increased in the same proportion, and may require to be tied. Hey met with two cases where from not having tied the bleeding vessels before the omentum was replaced in the abdomen, hæmorrhage occurred which nearly proved fatal.

Suppuration, although rather uncommon, sometimes takes place in the sac of an irreducible omental rupture. Le Dran mentions a case in which the pus entered the abdomen and proved fatal, and Dr. M. relates another, in which, however, the diseased state was more circumscribed and the result more fortunate.

Some of the older nosologists attempted to point out the prominent and distinctive symptoms of idiopathic inflammation of the omentum, so as to establish the means of distinguishing this disease from peritonitis or enteritis. Dr. M. thinks, however, that we shall seldom succeed in distinguishing the disease during life. It is only when the inflammation commences in an omental rupture, and extends to the abdominal portion of this membrane, that we can correctly ascertain its seat and existence.

Dr. M. states that he has frequently evacuated the fluid of ascites, by puncturing the sac of an old umbilical hernia, not only with safety, but with greater facility, and less inconvenience to the patient, than if the usual situation had been selected, and the practice is sanctioned by Sir A. Cooper.

An omental rupture is liable to be mistaken for a variety of diseases.

“When an intestinal hernia contains solid faces, it presents some of the most prominent characters of an epiplocele. The history of the disease will, however, enable us to arrive at a correct conclusion.

“Hydrocele of the spermatic cord, varicocele, &c. have also some resemblance to an inguinal epiplocele. It has likewise been mistaken for a common hydrocele.

“Adipose tumours are sometimes attached to the sheath of the spermatic cord, immediately exterior to the inguinal ring; but more frequently, they are formed within the abdomen, in the cellular texture which connects the peritoneum to the neighbouring parts, and are protruded through the ring. They thus occupy the position, and possess all the external characters of an inguinal epiplocele: and often render a diagnosis impracticable.

“When small in size, they can be reduced with facility, and prevented from again escaping, by the application of a truss; but when large, or indurated, they continue irreducible, and it is in this state they are likely to engage the attention, and baffle the skill and tact of the surgeon. Pelletan relates, in his “*Clinique Chirurgicale*,”* several curious cases of such tumours.

“In nearly all the recorded cases, where the adipose tumour originated with

* Tome III. p. 33, &c. Paris, 1810.

the abdomen, the peritoneum was pushed before it, so as to form a sac analogous to a hernia. But, in the only case of this kind, which I have had an opportunity of examining, the tumour was found to have originated in the cellular texture exterior to the peritoneum, close to the outer edge of the internal inguinal ring, and to have descended along the cord, and formed, externally, a large pyriform tumour, without being invested by a peritoneal sac. This tumour, which was irreducible, was supposed to be an epiplocele, although not accompanied by any of the symptoms usually attendant on this disease. This opinion was confirmed by the existence, at the same place, of an intestinal hernia, which could be easily reduced, and retained within the abdomen.

"After death, which was occasioned by pneumonia, the peritoneum was found dragged through the inguinal canal, by the descent and weight of the tumour, so as to form a sac, into which the intestine passed. The appearance of the tumour, when exposed by dissection, and its texture, when divided, so closely resembled the adipo-fibrous degeneration to which the omentum is occasionally subject, as to render it impossible to distinguish between them.

"The nature of the disease was only correctly ascertained, by finding that the tumour was exterior to the hernial sac, and that the omentum was unconnected with the tumour, and occupying the upper part of the abdomen."

The succeeding article, entitled, "*Some considerations with respect to the blood, founded on one or two very simple experiments on that fluid*," by BENJAMIN G. BAXINGTON, M. D., is an extremely interesting one. The principal experiment to which Dr. B. alludes, is the following:

Experiment I.—"Let blood be drawn in a full stream from the vein of a person labouring under acute rheumatism, in a glass vessel which should be filled to the brim. By close inspection a colourless fluid will be immediately perceived around the edge of the surface, and after a rest of four or five minutes, a bluish appearance will be observed forming an upper layer on the blood, which is owing to the subsidence of the red particles to a certain distance below the surface, and the consequent existence of a clear liquor between the plane of the red particles and the eye. Let now a spoon previously moistened with water, be carefully immersed into the upper layer of liquid by a gentle depression of one border. The liquid may thus be collected quite free from red particles, and will be found to be an opalescent and somewhat viscid solution perfectly homogeneous in appearance. By repeating the immersion we may collect this fluid in quantity and transfer it to another vessel. That which I employed, is a bottle holding about 180 grains, of globular form, with a narrow neck and perforated glass stopper.

"The solution with which the globular bottle is filled though quite homogeneous at the time it is thus collected, is found after a time to separate into two parts, namely, a clot of fibrine which has the precise form of the bottle in which it was gathered, and a clear serum possessing all the usual characters of that fluid."

This experiment shows that buffed blood consists of only two constituents, the red particles and a liquid, which Dr. B. terms *Liquor Sanguinis*.

It was long ago observed that what is called inflamed blood, coagulates slower than healthy blood, and that the last portions of blood drawn from an animal bleeding to death, coagulated quickest. The following appears to be the immediate cause of a buffed crust.

"The blood consisting of liquor sanguinis and insoluble red particles, preserves its fluidity long enough to permit red particles, which are of greater specific gravity, to subside through it. At length the liquor sanguinis separates, by a general coagulation and contraction, into two parts, and this phe-

nomenon takes place uniformly throughout the liquor. That part of it through which the red particles had time to fall, furnishes a pure fibrine or buffed crust, while that portion into which the red particles had descended, furnishes the coloured clot. This in extreme cases may be very loose at the bottom, from the great number of red particles collected there, each of which has supplanted its bulk of fibrine, and consequently diminished its firmness in that part. There is, however, with this limitation, no more fibrine on one part of the blood than another."

The above account of the cause of the buffed surface on blood, affords us an explanation of the well known fact that this phenomenon is influenced by the shape of the vessel in which the blood is received. The space left by the gravitation of the red particles, bears a proportion to the whole perpendicular depth of the blood, so that in shallow vessels scarcely any buffed coat may appear, where the same blood in a deep vessel would have furnished such a coat of considerable thickness. Dr. B. moreover asserts that the quantity of crassamentum is also dependant, within certain limits, on the form of the vessel employed. If this be shallow, the crassamentum will be abundant, if approaching in form the cube or sphere, it will be scanty. This difference is owing to the greater or less distance of the coagulating particles of fibrine from a common centre, which causes a more or less powerful adhesion and contraction of these particles. Dr. B. is, we believe, the first to notice this fact, and there are perhaps few relating to the phenomena of venesection, of more practical importance; since blood is said to be thick or thin, rich or poor, in reference to the quantity of crassamentum it contains, and views of a disease are founded on these supposed conditions, which after all depend not on the blood itself, but on the vessel into which it is received.

To obviate the objection which may be urged against a general conclusion drawn from the experiment just alluded to, that it was made upon blood in a diseased state, Dr. B. received some healthy blood in a tall glass vessel half full of oil, which enabled its red particles to settle more quickly than would otherwise be the case. This blood was found to have a layer of liquor sanguinis, which formed a buffed coat, whilst a portion of the same blood received in a similar vessel, having no oil, had no inflammatory crust, as it is called. Hence it appears that healthy blood is similarly constituted as blood disposed to form a buffed crust, the only difference being that the former coagulates more quickly than the latter.

The first experiment also shows that the liquor sanguinis is an uniform homogeneous fluid, and no mere mixture of fibrine and serum, for as already observed, the clot formed by the liquor has the precise shape of the vessel in which it is received; hence the coagulation takes place uniformly from every part of the fluid, and the uniform density of the clot confirms this conclusion.

Dr. B. is also led to believe that fibrine and serum do not exist as such in circulating blood, but that the liquor sanguinis when removed from the circulation, and no longer under the influence of the laws of life, has then, and not till then, the property of separating into fibrine and serum. This separation which may be considered a death of the blood, may, under disease, take place within the body, but never, he thinks, consistently with healthy action.

It follows from these views that there is no such animal fluid as coagulable lymph.

"The liquor sanguinis," says Dr. B. "cannot with propriety be so considered, for it is essentially a fluid, and if under certain circumstances it separates into two parts, only one of these (fibrine) is coagulable, nor can I admit that this one part, considered by itself, previously existed in a fluid state, for in order to its fluidity it was necessary that the two constituents should be so united as to form one compound. There is, therefore, no better reason for affirming, that fibrine exists in a fluid state in liquor sanguinis, than for affirming that muriatic acid exists in a solid state in muriate of ammonia. The salt, indeed, is solid, of which muriatic acid forms one ingredient, but the ammonia is essential to the solidity of the compound. In like manner, the compound is fluid, of which fibrine forms one ingredient, but the serum is essential to its fluidity.

"Nor is it an unimportant error to suppose a fluid secreted from the blood which has the property of becoming converted into a solid, for we are thus led to overlook altogether the fluid portion of the compound with the albumen contained in it, which always forms by far the greater portion of the secretion."

The fact of circulating blood consisting of a homogeneous liquor and red particles, has led Dr. B. to the belief that when an effusion of serum takes place, we shall generally, in some neighbouring part, find a corresponding deposition of fibrine. Dr. B. does not believe that serum is a secretion intended for the lubrication of closed membranes, but says that such belief is a fallacy founded on appearances observed after death, which do not exist during life.

"When we recollect," says he, "how quickly the separation of liquor sanguinis into serum and fibrine takes place out of the body, we ought not to be surprised to find, though it be but a few minutes after death, or even before it, if dissolution be gradual, a serous effusion into cavities which, during health, could not be destined to contain any fluid.

"I doubt the fact, however, that such membranes have the power during health of secreting serum, by which term I mean a fluid essentially containing albumen; or that any thing more passes from them than an aqueous halitus, or vapour; and I therefore doubt the propriety of giving them the denomination of *serous* membranes. Under morbid defect of vitality they may and do suffer serum to exude from them containing more or less albumen, and in such cases we shall usually find effused into some neighbouring part the corresponding fibrine, which with the serum in question went to form the liquor sanguinis. Such membranes may pour forth the liquor sanguinis itself, in which case we shall find the separation to have taken place in the cavities which they line. Gelatinous masses will gravitate to their lowest parts, or flakes, or shreds of fibrine will be diffused through the fluid.

"Wherever this gelatinous formation exists, it is owing to the presence of fibrine, since, as is well known, albumen never assumes a gelatinous form, under the ordinary temperature. We may indeed with albumen, when mixed with water and heated, exactly imitate this appearance of fibrine, and form substances of all degrees of gelatinous consistence; but this only serves to confirm the belief that fibrine, in a diluted state, may put on a gelatinous appearance on coagulation. I have stated that closed membranes may pour forth serum or liquor sanguinis. They may also, under high excitement, pour forth blood itself. There is, therefore, no better reasons for calling such membranes *serous*, than for calling them *fibrinous* or *sanguineous* membranes. The secretion of each is morbid, and we ought not to designate parts from the morbid actions which may be set up in them."

The examination of fluids effused into closed cavities, throws much light upon this subject, and Dr. B. has offered several illustrations derived from that source. These are scarcely susceptible however of analysis, and our limits will not permit us to insert them entire.

Before closing our notice of this interesting paper, we must allude to the great resemblance between liquor sanguinis and chyle. The principal difference indeed existing between them is the red particles in the former, which it is evident are not derived from the latter, and that we must seek for their formation in some of the viscera connected with the circulation. The spleen has been looked upon as their secreting organ, and it may be interesting to state, that Dr. B. has examined with the most accurate and powerful microscopes the blood of a dog, whose spleen had been removed several months previously, and on comparing it with that of a healthy animal, it did not appear deficient in the quantity of its red particles.

The third article is on the symptoms attending the change of a circumscribed popliteal aneurism into the diffused state, with some particulars of an aneurism of the aorta which burst into the œsophagus. The author of this paper, SAMUEL COOPER, Esq. is of opinion that there are certain particulars relating to the change of an aneurism from the circumscribed into the diffused state, which require greater attention than they have yet received, and that without this attention the obscurity sometimes prevailing in the diagnosis will be the occasion of many errors in practice.

“It is not enough,” he says, “to be informed, that when the aneurism becomes diffused, its pulsations are reduced, or stopped, and the limb painful, with an alteration in the shape of the swelling, coldness of the foot, and a sensation, experienced by the patient, of something having given way in the limb. Frequently, there is rather a complaint of numbness, than of pain; and if the aneurism be large, the compressed and altered state of the popliteal nerves, and the effect of distention on the branches of the cutaneous ones, will fully account for the general torpidness of the whole leg. With respect to a sudden change in the shape of the swelling, whether this symptom occur or not, will depend upon the situation of the opening formed in the sac, the extent and place of the extravasation, and the degree of œdema affecting the integuments. If the sac give way at a superficial point under the skin; the blood be effused in considerable quantity; and the limb be not already much enlarged from the œdematous state of the integuments; there will of course be a very manifest alteration in the shape of the swelling, and an evident and sudden extension, or increase of it. But, in the opposite conditions, that is to say, when the sac bursts at a very deeply seated point, when the blood is consequently injected into the cellular membrane between the muscles, and under the fascia; and when the integuments are already considerably thickened and swollen; a vast quantity of blood may be extravasated, without any remarkable change in the figure of the aneurismal tumour, or any very palpable increase in the tension and magnitude of the leg. As for the patient’s having felt something break, or give way in the limb at the moment when the sac burst, it is a kind of information not constantly to be obtained, because the rupture is sometimes very limited at first, or may happen during sleep; and when the sensation is declared to have been experienced, little reliance can be placed upon the account, inasmuch as patients, with popliteal and other external aneurisms, frequently complain of cramp, and sudden attacks of extraordinary feelings in their limbs, without any change of the disease from the circumscribed into the diffused form.

“When the sac of an aneurism has burst in the foregoing manner, the propulsion of blood into it from the heart, can evidently no longer have the effect of producing a full and sudden distention of it, as more or less of that fluid will

either escape from it into the cellular membrane, or collect in one mass out of the original sac. Sometimes, however, when the breach in the sac is under a certain size, the pulsations do not completely stop at first; their strength is only reduced; and several days may elapse before there is a total cessation of them. Now, unless we suppose, that the opening in the sac enlarges after its first formation, and that the subsequent decline and stoppage of the throbbing of the tumour, can be explained on this principle, we must look into other circumstances for an elucidation of this interesting fact.

"In a case of the preceding description, several causes combine to render the pulsations weaker and weaker, and at length to extinguish them.

"1st. The more or less impeded state of the circulation, that takes place in the limb, as soon as a considerable quantity of blood has been injected into the cellular tissue. And, in order that the extravasation may attain the degree necessary for the full production of this effect, a certain time is obviously requisite; the limited size in the opening of the sac, and perhaps also sometimes the particular situation of it, away from the main current of blood, preventing the effusion from becoming all at once copious and extensive. By degrees, however, the quantity of blood in the cellular membrane increases; and then its pressure not only creates a great deal of irritation, but actually interferes with the regular supply of blood and nervous influence to the limb. Hence, the alarming fall of temperature in the foot, and the well known tendency to gangrene, consequent to the change of a circumscribed popliteal aneurism into a diffused one.

"2dly. Another cause, that has a powerful effect in gradually putting an end to the pulsations, is the increase in the quantity of coagulated blood and fibrine in the sac; the inevitable result of the stream of blood through it becoming more and more retarded, in proportion as the obstruction of the circulation in the leg is augmented."

Mr. Cooper illustrates these remarks by a very interesting case of popliteal aneurism, in which there was a rupture of the sac without any change in the shape of the tumour, diminution of its firmness, or material increase in the swelling of the leg; gangrene resulted, and amputation of the limb became necessary.

In popliteal aneurisms of considerable size, there is always peril in delaying the application of a ligature to the femoral artery; for although there may be no immediate danger of the skin giving way, and of the patient losing his life by hæmorrhage, the sac is apt to burst, and the disease to change from the circumscribed into the diffused state, with all the disadvantages and risk inseparable from the latter condition.

"By delay we suffer the muscles of the knee to become permanently injured in their organization; a prodigious sac to be formed, which will require a great length of time to be diminished and absorbed; the popliteal nerve to be converted into a thin expansion, not resembling its original structure; the popliteal vein to be obliterated; and the condyles of the femur and head of the tibia to be in part destroyed by the pressure of the disease."

The most remarkable points in the case of aneurism of the aorta, is that the basis of the scapula was displaced by the aneurismal tumour, and that the patient lived nearly eight weeks after a communication had been formed by ulceration between the aneurismal cavity and the œsophagus, and followed the laborious occupation of a wheelwright during a considerable part of this time.

In the ninth volume of the Society's transactions a case is recorded of axillary aneurism in which the subclavian artery was secured above the clavicle, by

the late Professor Post of New York, the first we believe of the kind in which the operation succeeded. In the thirteenth volume of the same work a similar case, in which that operation was successful, is related by Mr. Key, and in the volume now under notice, two cases are given in which the operation has been attended with equally fortunate results, one by Mr. Crossing of Devonport, the other by Mr. Mayo.

Mr. Crossing's patient was a stout, muscular man, forty-six years of age; the tumour was situated immediately under, and closely in contact with the right clavicle, extending to the cartilage of the fifth rib, stretching into the axilla, and over the point of the shoulder. It has a very tense, elastic feel, and the pulsation is generally rather obscure, but at other times is so distinct as to be seen at a considerable distance from the patient. The tumour is not compressible, but the pulsation can always be stopped by pressing on the artery above the clavicle. The arm from the shoulder to the extremities of the fingers is swollen to an enormous size; is benumbed, and has lost all power of motion. The pulsation at the wrist cannot be felt; and the arm is kept nearly at a right angle in consequence of the magnitude of the swelling in the axilla, the pectoral muscle and integuments covering it being stretched to the greatest extent. He is always in pain, and at times to a most agonizing degree; is unable to lie back in the bed, but is continually in a sitting position, with the arm supported on a pillow, and the body bent forward. His countenance is marked with great distress.

The operation was performed June 23d, 1830, in the following manner. The patient was seated in an arm chair, the head directed to the left side. The integuments over the clavicle being stretched upon the chest, Mr. C. commenced his incision near the sternal attachment of the mastoid muscle, and cut freely on the bone for about three inches and a half, thus dividing at once the integuments and platysma myoides. The parts being now allowed to retract, left the lower margin of the incision half an inch above, and running nearly parallel with the clavicle, and exposed the jugular vein to a considerable extent, which was easily drawn aside and kept out of the way with a blunt hook. The cervical fascia was next carefully divided from the clavicular edge of the sternocleido mastoideus to near the extremity of the wound, which brought into view the omo-hyoideus. This muscle instead of forming a triangular space, as it does in most instances with the scalenus anticus and clavicle, ran in a line with and just above that bone. Finding this rather unusual course of the omo-hyoideus an impediment, Mr. C. passed a director under and divided it. The knife was now laid aside, and the remaining part of the operation finished with the fingers and a common director. Some loose cellular membrane, and a large fatty gland being removed, the artery was found immediately below this substance, and three considerable branches of nerves passing over the vessel, and in close contact with it. These were separated, and the ligature passed under it, and tied in a double knot. One end of the ligature was cut off close to the artery, the other left hanging from the wound, the edges of which were now brought together, and secured with one suture and adhesive straps. Nothing very remarkable occurred during the progress of the cure—the ligature was retained until the eighty-fifth day. On the 28th of December following, the

man's health is stated to be perfectly good, the circulation free and perfect throughout the limb, and nothing left of the tumour but a little thickening in the sac of the aneurism, along the edge of the pectoral muscle. There remains, however, some want of strength and sensation in the limb.

The gland described as existing in this case immediately over that part of the artery which was tied, Mr. C. thinks would prove a better guide in this operation than the scalenus muscle. Mr. C. thinks that this gland will usually be met with; he says, that in not less than a dozen subjects whom he has examined, it was found precisely in the same situation.

The subject of Mr. Mayo's case was an athletic man aged forty-nine. The tumour was seated beneath the left clavicle, was four or five inches long and three in depth, and caused violent gnawing pains about the shoulder, breast, and back, from the irregular distention it occasioned of the axillary plexus of nerves. The operation was performed on the 26th of March, 1831, and is thus described:—

“Drawing down the skin of the neck, I made an incision about three inches and a half in length on the surface of the left clavicle, extending from the insertion of the sterno-cleido mastoideus muscle to the clavicular portion of the trapezius; by this the platysma myoides was exposed, which, as well as the sub-jacent fascia, I carefully divided, for upon the latter many branches of the external jugular vein were found, several of which I was obliged to divide in the progress of my dissection through the cellular substance, and secure them with ligatures. I traced the edge of the omo-hyoideus muscle, traversing the upper part of the wound, and directly below it I could place my finger on the artery as it passed over the first rib, which seemed to be about an inch and a half or two inches from the surface; to this point I directed all my attention, and endeavoured to clear my way to the artery by cautious touches with the edge of the scalpel, and by tearing the cellular substance with its handle, and with a director, till at length I was able to get my nail upon the rib and then under the artery, so that after various efforts I passed a common blunt aneurismal needle under it, armed with a strong round ligature, and having ascertained that nothing else but the artery was included in the ligature, I tied it with a double knot, drawing each knot tight with the iron rings invented by the late Mr. Ramsden. The subclavian vein appeared just within and below the superior border of the clavicle, but formed no impediment to the operation; the branches of the external jugular, however, were very annoying, and kept the wound continually filled with blood, and the apprehension of wounding larger branches limited the extent of the internal wound to two inches at most. He bore the operation with great courage, though with some impatience, as it occupied rather more than twenty minutes; the pulsation ceased, and the pains in the shoulder were much relieved.

The ligature came away on the eighteenth day, and on the 2d of May the wound had completely cicatrized, the tumour had quite disappeared, and the arm was recovering its strength, but the pulse was not to be felt at the wrist.

Dr. JOHN VERCH, in a brief communication, extols the effects of tobacco as a local application in gout and other cases of constitutional inflammation. Dr. V. says that this article is capable of alleviating in a great degree, and sometimes altogether arresting various forms of specific inflammation, particularly rheumatism and gout, and that in this last disease it also assists the parts most materially in recovering their tone and strength. He adds that it is also a valuable applica-

tion in all cases of erysipelatous inflammation, and that the only precaution to be attended to, is not to apply it to any part contiguous to the stomach, unless the production of nausea be at the same time desirable. He equally recommends it in acute migratory inflammation, attacking the testicle or sclerotic coat of the eye. Dr. V. employs the infusion made according to the London Pharmacopœia, and in many cases he says it will be well to rub the part with eau de cologne, after the use of the tobacco.

The history of a case, in which, on examination after death, the pancreas was found in a state of active inflammation, by WILLIAM LAWRENCE, Esq. constitutes the seventh article. This case is interesting, both from the circumstance of morbid changes in the structure of the pancreas being extremely rare, and also because it connects the symptoms and progress of the affection with the morbid changes which were produced.

The subject of this case was a lady, twenty-one years of age, who, about the fifth or sixth month of her pregnancy, lost her usual healthy appearance, and gradually became pallid, but without feeling unwell. About a month previous to her confinement, she had a severe attack of catarrh, with very little fever, and which yielded to the usual remedies. The morning on which her labour commenced, (the 29th of January,) she looked and felt extremely exhausted. The presentation was natural, the pains returning at pretty regular intervals, and she was delivered of a healthy child. The placenta was expelled by the contraction of the uterus five minutes afterwards, and she did not, during the whole labour, lose two ounces of blood. The night after her labour was passed without pain; she was tolerably tranquil, but got little sleep. It was evident on the third day after her delivery, that although the labour was comparatively easy, she had suffered much from the exertion. She felt so exhausted that she was constantly calling for sal volatile to smell, and occasionally to take internally, in order to prevent fainting: she sighed deeply and frequently. The least attempt to raise her head from the pillow produced a violent beating in the temples, but it subsided after a few minutes of perfect quietude. Her pulse was feeble and irritable, at about eighty-six beats in a minute. The bowels were rather relaxed.

Her state and symptoms were like those of persons who have lost large quantities of blood; and her medical attendant considered that there was a defect in the process of sanguification. Under this view of the case, which was adopted by a physician who saw her soon after her confinement, cordials and stimuli, both medical and dietetic, were resorted to. No advantage resulted from this plan, and another physician was called in, who recommended calomel and opium, on the idea that inflammation had taken place in the chest, and that effusion had probably been the consequence. Mr. L. saw her about thirty-six hours before death, when no hope of recovery could be entertained. She was excessively pale, with a rapid, feeble pulse, hurried breathing, some fulness and uneasiness on the right side of the abdomen.

Mr. L. says that he afterwards learned that this lady had been most singularly troubled by thirst during her pregnancy, and that her mother, alarmed by her drinking cold fluids in large quantity, had represented to her that she feared

the circumstance might prove injurious to the child. She had also suffered much from pain in the epigastric region, which was sometimes so severe as to oblige her to retire to her own apartment. In mentioning this circumstance, her mother drew her hand across the abdomen in the seat of her daughter's sufferings, and she pointed exactly to the situation of the pancreas.

She however declared to her physicians, who attended during and after her confinement, and who examined her abdomen several times to discover if there was tenderness there, that she felt neither pain nor soreness on pressure.

Examination thirteen hours after death.—"The body had not lost its heat; the internal parts were warm to the touch. The skin was universally and extremely pale. No blood escaped on making the incisions necessary for exposing the abdomen and thorax and for sawing round the skull.

"The membranes lining the abdomen and thorax, and the viscera contained in those cavities, excepting the pancreas and spleen, were extremely pale and almost bloodless. The appearance was like that observed in persons who have died of hæmorrhage, or under the state described by the term anemia. The liver and kidneys were pale, and the several portions of the alimentary canal quite white, without any traces of blood in them.

"The heart was pale and rather large; its cavities and the contiguous large vessels contained some fluid of watery consistence, about the colour of red wine, and small portions of soft coagula. The coronary vessels contained no blood. The muscular substance of the heart was pale and rather flaccid: the structure of the organ in other respects was natural. The lungs were healthy, except that frothy fluid escaped on cutting into their posterior part. The cellular texture around the pancreas and duodenum, the great and small omentum, the root of the mesentery, the mesocolon and the appendices epiploicæ of the arch of the colon were loaded with serous effusion. The fluid, which was transparent, bright yellow, and of watery consistence, ran out in large quantity on cutting into the parts above mentioned, which were distended in some places to the thickness of two or three inches.

"The pancreas was throughout of a deep and dull red colour, which contrasted very remarkably with the bloodless condition of other parts. It was firm to the feel externally; and when an incision was made into it, the divided lobules felt particularly firm and crisp. The texture was otherwise healthy. The part was left wrapped up in a cloth for nearly forty-eight hours after its removal from the body, the weather being then very cold. At the end of this time the hardness was gone, and the gland even appeared rather soft.

"The spleen was rather large and turgid, livid externally, brownish-red internally, and somewhat soft in texture.

"The surface of the dura mater, covering the cerebral hemispheres, was lined in the neighbourhood of the falx, with a very thin, soft, and almost mucilaginous layer of light red tint; it could be scraped off with the handle of the knife, leaving the membrane of its natural appearance. There was slight serous infiltration of the pia mater. The blood-vessels of the brain were moderately full. The distention of the cellular membrane by serous effusion in this instance was analogous to the œdematous swelling which often occurs round other parts when actively inflamed.

"The pancreas is not unfrequently found after death, as it was in this case, preternaturally hard; and I suppose that the gland has been in this state in the numerous instances, in which we hear and read of its having been scirrhus. Although I do not know on what this hardness depends, I have never considered it as a morbid condition; because it occurs in individuals who have died of other diseases, without any symptoms referable to the pancreas; because the structure of the part is perfectly healthy in all other respects, and because the hardness soon disappears after death, as it did on this occasion."

The volume concludes with some pathological and practical researches on uterine inflammation in puerperal women, by ROBERT LEE, M. D. We shall make this the subject of a special article in a future volume.

XVII. *A Treatise on Indigestion, with Observations on some painful complaints originating in Indigestion, as Tic Douloureux, Nervous Disorder, &c.* By THOMAS J. GRAHAM, of the University of Glasgow, and of the Royal College of Surgeons, London, &c. First American, from the last London edition, revised and enlarged, with *Notes and an Appendix, containing Observations relative to the Modes of treating Dyspepsia*, lately adopted and recommended by Dr. AVERY, Mr. HALSTEAD, and others. By an American Physician. Philadelphia, Key & Mielke. Oct. pp. 206.

The fruitful topic furnished by dyspeptic ailments, has, we think, been very judiciously treated in this volume of Dr. Graham's. The author's attention is not only directed to the best curative means, but to the exposition of the erroneous views that have been heretofore too generally inculcated in regard to certain affections often complicated with indigestion. He dwells particularly upon the two most prominent errors of the day, namely, the mistaking severe disorders of the stomach and intestinal canal, for disease of the liver, and the employment of large doses of mercurials for the cure of supposed liver complaints. He wishes to be understood as not inveighing against the proper use, but only against the *abuse* of mercurials, this last being an evil of magnitude in British practice, and we think there is reason to believe, of still greater extent in that of America.

Dr. Graham maintains that the maladies generally denominated "*liver and bilious complaints*," proceeding from a supposed disordered condition of the liver, are not in any degree so frequent or so formidable as disorders of the alimentary canal. This he thinks sufficiently demonstrated by enlightened anatomists whose numerous and close dissections were not instituted for the purpose of serving any particular views or doctrines. The investigations of Louis, Broussais, Andral, Abernethy, Howship, Marshall Hall, &c. are adduced in support of the correctness of his opinions. Whilst upon the subject of the fallacious character of the symptoms ordinarily reckoned the certain indications of disease in the liver, he gives us the following account of a late eminent British practitioner.

"The late Dr. James Curry, (*de mortuis nil nisi verum*,) whose book on biliary concretions, together with his mode of practice, operated greatly in making diseased liver, and its supposed remedy, calomel, so very fashionable and fatal, was so wedded to his notions on this subject, that in his patients, *invariably*, the liver was considered the real source of all their ailments; and if, when labouring under stomachic irritation and disorder, they complained of pain in the left side, in the region of the stomach, he would endeavour to persuade them they were mistaken, and that it certainly was in the right! If he could not bring them over to this belief, it was his custom to say, 'Ah, I shall bring it there then!'"

He subsequently informs us in another part of his treatise, that the same Dr. Curry was in the habit of putting his hand to his right side, and saying, he was assured there was a very small portion of liver left there.

"Some might think," observes Dr. Graham, "it was not wise in him to make so frequent a confession of this kind, since, if a man could live for years in tolerable health, (which was his case,) with only a very small portion of liver, and that probably in a state far from healthy, the conclusion generally drawn from thence would be in no small degree unfavourable to the doctor's opinion, of the supreme importance of the healthful actions of this viscus, and of the absolute necessity of resorting to the free use of calomel in its derangements. However, he was totally mistaken in his own case, for after death the liver was found to be quite sound! a circumstance not much in favour of his discriminating powers. Yet authors are not wanting, who speak of the practical success of this physician, attributing it to his superior acquaintance with hepatic disorders. To me, this success and discernment appear equally problematical."

Dr. Graham distinguishes four different kinds of disorders of the digestive organs, each having its seat principally if not exclusively in a particular organ, though one species or variety seldom exists for any length of time, without producing an unfavourable change in the neighbouring parts. In one variety the stomach is the seat of the affection, in another, the small intestines are involved, in a third, there is faulty or deficient biliary secretion, whilst in the fourth, the large intestines are most affected, the derangement existing there being sometimes the single cause of much local and general disturbance and distress. These, one and all, exert an immediate tendency to prevent the regular and perfect digestion and assimilation of the food.

The discriminating symptoms of each of these varieties are pointed out with great distinctness, and after this we have the causes and treatment of indigestion successively dwelt upon with great ability. The views entertained by Dr. G. in relation to the pathology and treatment of indigestion differ essentially from those of most writers upon the subject, and we regret that we have not space in our bibliography for even such a sketch as might gratify the general inquirer.

An ample appendix by the American editor adds some of the latest intelligence relative to dyspeptic complaints. The treatises particularly noticed are "the Dyspeptic's Monitor," "Abercrombie on Diseases of the Stomach," &c. and Mr. Halstead's "New method of curing Dyspepsia." The productions of the two New York authorities, Dr. Avery and Mr. Halstead, are examined at considerable length, and the mechanical process constituting the new method of the latter, very accurately described.

G. E.

XVIII. *Remarks on the History and Treatment of Delirium Tremens.* By JOHN WARE, M. D. Fellow of the Massachusetts Medical Society. Boston, 1831. pp. 61. 8vo.

This interesting and well written treatise appears to have been originally published in the Transactions of the Massachusetts Medical Society, a work we have not had an opportunity of seeing, but which is an important addition to our medical literature if its contents tally with the specimen before us.

The subject of delirium tremens has necessarily attracted much attention from practitioners, and especially from such as are attached to public institutions, in which unfortunately there are but too frequently cases of this disease, and we offer no apology to our readers for again drawing their attention to it, being

fully convinced, to use the words of our author, "that every subject in science, and more particularly, every subject in a science of a nature so peculiar as that of medicine, requires not only careful and repeated observation, but the careful and repeated observation of many individuals, in order to its thorough illustration."

Dr. Ware has had ample opportunities of studying the disease in question, as he states that his remarks are deduced from nearly one hundred cases, of which seventy-seven occurred in private practice, and the remainder in the Boston Alms-house; these were cases in which the disease was fully developed, as he does not include that far greater number of instances of incipient disease so common among drunkards. In his appreciation and treatment of these cases, Dr. Ware, we are glad to perceive, has followed the dictates of his own judgment, instead of blindly following one or the other of the favourite modes of cure. Most writers on this disease seem to think that although no two cases are precisely similar, that these differences need not lead to any corresponding difference in the mode of treating them; the result of Dr. Ware's observations has led him to a belief, that what are considered as the most peculiar and prominent symptoms, are not those which are really of the most importance, but that the practitioner is to be as much governed by the general situation of the patient, the character of his attack, and the state of his constitution, as in other diseases. As is well known to every one that has seen much of this complaint, the susceptibility of drunkards to it is exceedingly various; in some it occurs on the slightest derangement of their functions, whilst in others the severest attacks of disease may take place without it making its appearance; nor does it appear to depend on the degree of indulgence in spirituous liquors, or the period of time during which they have been used. At the same time, as is remarked by Dr. Ware, those who become intemperate early in life are more subject to it than those who acquire the habit gradually, and have not used spirituous liquors to excess until they have reached maturity.

Dr. Ware combats the common opinion, that *delirium tremens* is in most cases immediately occasioned by an abstinence from ardent spirits, and states, that in a large proportion of instances this had nothing to do with it. This agrees with our own experience; as we have seen numerous cases in which the disease appeared in the midst of the most excessive indulgence, as well as under the other circumstances to which he alludes. It may make its appearance suddenly, or be ushered in by a train of premonitory symptoms, of various degrees of violence, and is peculiarly liable to occur in those drunkards who suffer from irritability of the stomach and frequent vomiting. We are sorry that our limits will not permit us to extract the entire account given by the author of the progress and termination of an attack of *delirium tremens*; it is admirably and graphically drawn up, but is too long for insertion, and would lose its peculiar merits by condensation; we therefore pass to Dr. Ware's descriptions of the several circumstances, states of the system and disease, in connexion with which the *delirium* makes its appearance. 1st. "As the immediate consequence of a particular excess, or of a succession of excesses, in individuals not otherwise disposed to disease." This form is very common, and is vulgarly known under the name of the "horrors," and it is these cases, according to our author, that have led to the opinion that the disease was capable of being

treated with equal success by the most opposite remedies; this inference, he thinks, unfounded, as it will equally subside of itself unaided by art. 2d. It occurs "as the consequence of habitual intemperance, without being occasioned by any particular or extraordinary excess." Cases of this kind are much more severe and dangerous than the preceding, and are usually attended with more derangement of the gastric organs. 3d. Attacks of delirium tremens also occur "in connexion with other regularly-formed and well-marked diseases, or else as the consequence of injuries." In these cases it often comes on when the patient is convalescent from the primary disease, or when he is only apparently convalescent. In all the above instances, the delirium assumes the form of a regular paroxysm, terminating in sleep; but this is not always the form it assumes; when supervening on other diseases, it may present many anomalies, both in its course and symptoms.

Dr. Ware next gives a particular history of its principal symptoms; these are delirium, watchfulness, and tremor, of which the first is the most universally and constantly present: we cannot follow in detail this part of his treatise, for reasons already stated, but two or three of his remarks require to be noticed; thus, he justly observes, that an important distinction may be drawn between the watchfulness and tremors, as characteristics of the disease, "that the former occurs only in this affection, whilst the latter makes its appearance in all cases of sickness among drunkards, and is even common in many who are in their usual health." Besides these leading symptoms, others take place of more or less importance, as convulsions, some unnatural sensation in the head, variation in the pulse. "There is nothing peculiar in the state of the tongue; it is commonly preternaturally clean, red, and tremulous; but this appearance is common in diseases of drunkards." It is sometimes covered with a thin white coat, and more rarely thickly encrusted. "In general, we may regard the tongue as rather indicating the general state of the system, than the state of the disease itself." We notice Dr. Ware's opinion on this point the more particularly as the foulness of the tongue is considered by the advocates of the emetic plan of treatment as one great indication for their use. The appetite usually fails; thirst is seldom excessive; the skin is generally soft and moist from the first, and towards the close of the disease it is bathed in sweat.

"Morbid anatomy has thrown no light on the nature of that affection of the brain and nervous system, which gives rise to the peculiar symptoms of delirium tremens. Indeed, its history would rather lead us to expect, that these symptoms do not depend on any organic changes discoverable by dissection, but merely on a disturbance in their functions." In the treatment of these cases, Dr. Ware observes, that we should constantly keep in view:—"1st. By what measures may we prevent an attack of delirium tremens when it is threatened? 2d. By what measures may we arrest or alleviate the paroxysms, or carry the patient in safety through it." As regards the first of these inquiries, an attack, he says, is to be prevented by the judicious use of such general measures as will be spoken of in treating of its management. On the second question he dwells at some length, especially as to whether it is absolutely necessary to procure sleep by the assistance of art; on the benefit of natural sleep there is no difference of opinion, but authors are not so unanimous as to the paramount importance of this state when artificially produced. Dr. Ware him-

self inclines to the belief, that this artificial sleep is not so necessary as has been supposed, and that even in many of those cases where it is said to have been beneficially induced, it did not actually take place sooner than it would have done in the natural course of the disease. "I am satisfied, therefore, that in cases of delirium tremens, the patient, so far as the paroxysm alone is concerned, should be left to the resources of his own system, particularly that no attempt should be made to force sleep by any of the remedies which are usually supposed to have that tendency." We invite the attention of practitioners to Dr. Ware's arguments on this head, and although we do not agree with him as to the inefficacy of narcotics, we are ready to admit that he has staggered our belief in their absolute utility; and we have long agreed with him, that the ratio of success by the *expectant* plan has been nearly, if not fully as great as by the stimulant, or rather the narcotic.

Dr. Ware's own mode of procedure may be thus summed up. When the attack is preceded by acute disease, the course which is most likely to relieve the original affection, is most likely to prevent the delirium, or at least to make it milder. In the treatment of the delirium itself, blood-letting is of great utility when properly timed, and employed with judgment, but is by no means to be indiscriminately resorted to in all cases. Local is more universal in its adaptation than general bleeding, and in fact may be beneficially employed in a majority of instances. Emetics are useful in all cases where the digestive organs are deranged, not to hasten the accession of sleep, as at first proposed, but for their effects on the general state of the system. No particular advantage arises from purging to any extent; it is, however, desirable that the bowels should be kept open. Blisters, though reprobated by many practitioners, have been found useful in some cases. The general course to be pursued is thus detailed by Dr. Ware:—

"Where we are satisfied that the delirium is the immediate consequence of the excessive use of liquor in an individual previously in good health, no medical treatment is necessary. If the patient be left to himself, and be debarred from ardent spirits, the attack subsides spontaneously. In the worst cases no medicines can be required beyond a dose of salts, and an infusion of valerian, of wormwood, or of hops. In those cases which are preceded by some general derangement of the system without any well-defined disease, our course is to be determined by the nature of the derangement, and the state of the constitution. Where the patient is robust and vigorous, more particularly where in such a patient there has been convulsions, or severe pain in the head, general bleeding should be freely adopted, and is the most important remedy. In almost all cases, let the constitution be what it may, local bleeding may be regarded as beneficial, if not indispensable; and it is particularly called for, where there is dizziness, pain in the head, or much flushing of the countenance, with heat in the head or face. When the digestive organs have been long in a deranged state, especially when the stomach appears to be loaded with a mass of secretions which are offensive to it, and which excite it to ineffectual vomitings, a powerful emetic is of essential benefit. This may be followed by a cathartic of calomel, either combined with, or followed by some other article which will promote its full operation. It is afterwards only necessary to regulate the bowels by mild laxatives, unless some unusual symptoms arise which indicates a more active evacuating treatment."

Dr. Ware is of opinion that the common practice of allowing spirituous

liquors during an attack, is incorrect. The diet should consist of nutritious liquids. As little restraint should be exercised over the patient as is consistent with propriety and safety; patients should never be intrusted, especially during the night, to females alone, as they frequently require to be restrained from acts of violence on themselves.

The treatment after the paroxysm has nothing peculiar, and the convalescence is generally rapid.

It will be seen by the above sketch, that Dr. Ware's plan of treatment differs from the generality of modes proposed, being however more allied to the expectant than to the others. We recommend an attentive perusal of his paper to the advocates of the stimulant school, as showing that equal advantages may be obtained without the use of narcotics, &c.

R. E. G.

XIX. *Treatise on the Excision of Diseased Joints.* By JAMES SYME, Surgeon, &c. p. 163. 8vo. Plates V. Edinburgh, 1831.

The object of this work is to recommend the practice spoken of in the title, which seems to have been very successful, at least in Edinburgh, for out of seventeen cases of excision of the elbow-joint performed there, only two have terminated fatally, of which, one the author believes would have died from any operation whatever, while in the other, the disease was found so extensive as to render excision almost impracticable.

The considerations which give to this operation an advantage over that of ordinary amputation, are less ultimate hazard to the life of the patient and the preservation of the limb.

"The advantages of amputation are, that it quickly, easily, and effectually removes the disease; but these are balanced by the serious objection of its depriving the patient of a limb; and it may be added, that, though this operation cannot now be regarded as attended with much danger, it is certainly not by any means free from it. To say nothing of the ordinary bad consequences of amputation, I must here particularly notice the risk of inflammation and supuration of the lungs, or other internal organs, which renders the result of amputation for caries so unsatisfactory, especially in hospitals. Every one who has attended the Hotel-Dieu, must have remarked the frequency of death, or rather the rarity of recovery after the removal of limbs in such circumstances; and though the evil seldom goes to such an extent in other places, I am sure all practical surgeons must be familiar with it. It is also observed that adult patients who have suffered amputation for caries, often fall into bad health, and die of dropsy or some other chronic complaint within a year or two after the operation. These bad effects seem referable with most probability to the disturbance which is excited in the system by taking away a considerable part of the body; but, whatever be the true explanation of them, there can be no doubt as to the fact of their occurrence, which ought to be carefully remembered in making the comparison that is now attempted.

The great recommendation of excision is, that it saves the patient's limb; and the benefits accruing to him from this are so important and conspicuous, that unless the objections which can be urged against it, should appear after mature consideration to be very serious indeed, we ought not to hesitate in giving it the preference. These objections so far as I have been able to ascertain, are the following:—*First*, The difficulty of the operation. *Second*, Its danger. *Third*, The useless condition of the limb in which it has been performed."

Our author asserts with much confidence, founded on his experience, that even in old cases of diseased joints, when the sinuses are numerous, the texture of the surrounding parts much vitiated by suppuration and the effusion of serum, together with a synovial membrane converted into a thick, gelatinous substance, yet the operation is effectual.

He remarks, that—

“ With regard to the cartilage, it might be expected that no harm could result from leaving any part of it that remained sound; but here too the judgment of theory is reversed by experience, since it has been found that when any portion of the articulating surface was left, the disease required a subsequent operation. The cause of this is probably to be referred, not so much to any morbid process in the cartilage itself, as in the synovial membrane lining it, and in the spongy bone immediately subjacent, which has its tendency to morbid action excited by the injury sustained in its neighbourhood. The operation, therefore, essentially requires the removal of the whole cartilaginous surface.

Lastly, as to the bone, one not acquainted with the pathology of the osseous tissue, who examined the bones of carious joints after maceration, might be apt to suppose that the diseased part could not be removed without sacrificing so large a portion of the whole as to render it useless and unworthy of preservation.” Mr. S. gives a representation in his work of an elbow-joint, which he amputated before adopting the plan of treatment now under consideration. In this the bones are much increased in thickness to a considerable distance from the articulation, and their surface in the whole of this extent is covered with irregular warty excrescences, which give it a rough tubercular appearance. “ When these tubercles are examined more particularly, they are found to consist of a compact osseous substance, which is smooth on the surface, and perforated with numerous apertures for the transmission of blood-vessels. This is new bone, and perfectly healthy in its actions; it resembles in all respects the callus, or new osseous substance, which effects the reparation of fractures, and is thrown out in consequence of the irritation of the disease. The truly morbid or carious portion of the bone occupy merely the articulating surfaces. The external shell of the spongy bone is removed by the disease, and the cancelli are exposed to view, presenting a rough surface composed of rigid plates and spiculae, which are white and more brittle than usual, so as to seem as if they had been subjected to the action of fire. The depth to which the bone is thus affected varies considerably, according to the origin of the disease. When the morbid action commences in the synovial membrane or cartilage, it is generally superficial: but when the inflammation is primarily seated in the substance of the spongy bone, as in the third kind of white swelling which has been mentioned, then, as has been already stated, the substance of the bone is more deeply affected, being often excavated into a hollow, which is carious over the whole of its surface. The extent of this cavity seldom, or rather never exceeds the bounds of the epiphyses, except sometimes in young subjects, where the bone has been widely altered by scrofulous action, previous to suffering the inflammation which more immediately occasions the caries. From not distinguishing between the truly diseased bone and that effused in consequence of its irritation, it appears that a much larger portion has been taken away in some of the cases of excision hitherto published than there was any occasion for. Less than a half of the portions of the humerus and femur which were removed by Moreau and Crampton, I should certainly think, so far as can be judged from the evidence of their drawings, would have been sufficient for the purpose, in which case it is plain the limbs would have been much less shortened and weakened, and the magnitude and consequent severity of the operation diminished. As already stated, the caries seldom goes beyond the epiphyses, which are all the part of the bone that the surgeon requires to

remove except in the rare cases where the bone is found to be more extensively affected; and in these it will probably be most prudent to perform amputation."

Mr. Syme considers that in regard to the hazard of this operation, it is much inferior to that from a wound inflicted on a sound joint, and that the effect of it is rather to allay than to increase irritation, for patients have been observed to sleep better the night after the operation, than for a long time previously.

"It has been said, that after the joint is cut out, the bones must either unite together, so as to render the limb rigid and unserviceable, or, if it remain moveable, the attachments of the muscles having been separated, it must be no less unfitted for use by its flaccidity and want of subjection to voluntary motion. With regard to the first of these events, I think it cannot be denied that ankylosis of the shoulder or elbow, provided the other joints remained entire, so far from rendering the limb useless, would not prevent many of its usual actions, and certainly not to the extent of permitting it to be compared, in respect of utility, with an artificial substitute. But it has been ascertained by the sure decision of experience, that true ankylosis or osseous union does not occur generally or even frequently in these circumstances; indeed, I feel authorized to say, not without very great attention on the part both of the surgeon and patient in favouring its accomplishment, particularly in preserving absolute rest; but when no such precautions are used, the union is established by means of a tough, flexible, ligamentous-like substance that permits the bones to be used with more or less freedom, according to the exercise which they are made to undergo during the process of healing. And the voluntary motion, though at first impaired, or altogether lost, owing to the relaxation of the muscles, which is caused by the approximation of their attachments, necessarily resulting from the shortening of the bones, gradually returns, and ultimately becomes as strong as ever. What seems to occasion the greatest difficulty in conceiving the possibility of recovering voluntary power over the new joint, if joint it may be called, proceeds from inattention to the fact, that muscles or tendons, when cut away from their attachments, fix themselves to the parts on which they come to rest. Thus the muscles of a stump adhere round the bone, so as to enable the patient to use it with force and freedom; and when amputation is performed through the tarsus, the *tibialis anticus* and extensors of the toes fix themselves so as to counteract the extensors of the heel. Independently of theory, however, we have here the more satisfactory assurance of positive facts; and the cases related below, will, I trust, be considered sufficient evidence to show that it is possible to save limbs by excision of diseased joints, nearly, if not altogether, as useful as before they suffered from disease.

"In addition to the arguments against excision which have now been considered, it has also been objected that the operation affords no assurance against a return of the disease, but as this objection applies equally to amputation, it need not be taken into account."

Mr. Syme recommends for this operation a long, narrow scalpel, which is to be thrust at once into the joint so as to open it freely; the parts covering the bones are then to be dissected up the proper distance, by keeping as near as possible to the bones, so as to leave the tendons and muscles. The bones are then to be sawed through with an amputating saw, which he thinks the most convenient instrument; it is, however, sometimes better to finish the division of them with the bone pliers. The hæmorrhage, though free in the beginning, seldom persists so as to require the application of ligatures, but occasionally the latter are indispensable.

“The next part of the process is to place the edges of the wound in contact and retain them together, which is best effected by the interrupted suture, unless the integuments should be so very soft as to give way under the pressure of the threads, in which case compresses of lint must be used in their stead. It is always of most consequence to unite the edges of the transverse incision, if there is one, since, if they do not heal by the first intention, they are afterwards brought together with very great difficulty, and the broad cicatrix which results from their separation is very adverse to the mobility of the joint. Some compresses of lint ought to be applied over the flaps, and then the limb being placed in a proper position, that, namely, in which it will most frequently be required after the cure is completed, it ought to be enveloped with a long roller, which affords the requisite support much better than splints or rigid cases of tin or pasteboard.

“The constitutional disturbance, for the reasons already stated, is usually very slight, and requires nothing more than some gentle purgative or slight antimonial, with spare diet and rest. The pain is usually severe for the first five or six hours, but then subsides, and seldom proves troublesome afterwards. The dressings ought to be changed ten or twelve hours after the operation, by which time the oozing of blood and serum will be at an end; and then also any inequality or gaping of the edges may be rectified by slips of sticking-plaster. Union by the first intention sometimes takes place through nearly the whole line of incision, except where old sinuses exist in its course: more frequently the adhesion is only partial and the wound opens out more or less widely, according to the degree of local inflammation, and the distention caused by blood contained within its cavity. In the course of a few days, the discharge, which was at first copious and offensive, begins to diminish; all the clots of blood issue from the wound; the swelling subsides; and the favourable change is altogether so sudden and satisfactory, as to surprise those who are not accustomed to witness the operation.

“During the cure, every means is to be employed either to keep the limb perfectly quiet, to favour ankylosis, or to exercise it in the degree and extent of mobility which will be required of it. The wound is generally very nearly healed in the course of a few weeks, but one or more sinuses continue to discharge for months or even a year or two. Small portions of bone also occasionally come away; but if the surgeon has done his duty in the first instance, he need not be under any apprehension on these accounts; and the patient will be too well pleased with being freed from the pain of his disease, and having regained the use of his limb, to feel annoyed by the trifling inconvenience which he thus experiences.”

After these general observations, Mr. Syme gives a narrative of the cases where he has applied successfully this operation to the shoulder, the elbow, the knee, and the foot, the details of which it is not necessary to introduce here. Some of the recoveries were certainly of the most gratifying kind, and highly honourable to the science of surgery.

We present in extenso his methods of operating on some of the joints, as it would be difficult to give an abstract of them with justice to the author.

In the case of the shoulder, he says—

“I believe that the best way of bringing the bones completely within reach with least injury to the soft parts, is to make a perpendicular incision from the acromion through the middle of the deltoid, nearly to its attachment, and then another shorter one upwards and backwards from the lower extremity of the former so as to divide the external part of the muscle. The flap thus formed being dissected off, the joint will be brought into view, and the capsular ligament, if still remaining, having been divided, the finger of the surgeon may be passed round the head of the bone, so as to feel the attach-

ments of the spinati and subscapular muscles, which can then be readily divided by introducing the scalpel first on the one side and then on the other. After this the elbow being pulled across the forepart of the chest, the head of the humerus will be protruded, and may then be easily sawn off while grasped in the operator's left hand. The subsequent part of the operation will be conducted on the principles already explained, and as it is of course desirable to preserve as much mobility as possible, no means should be used to restrain motion further than are necessary for preventing irritation and displacement. The *pectoralis major* and *latissimus dorsi* tend to draw the extremity of the bone inwards, but this may be easily prevented by placing a cushion in the axilla."

In the operation on the elbow, he recommends the patient lying with his face downwards, on a sofa or table.

"It is always right to take away the whole of the sigmoid cavity of the ulna, which comprehends the olecranon and coronoid processes, together with the head of the radius and extremity of the humerus as high as its tuberosities. More than this, for the reason just mentioned, need not be removed; and a smaller portion would not include the whole of the cartilaginous surface, none of which, according to the general principle already explained, ought ever to be allowed to remain.

"The easiest way of accomplishing this, is to remove the olecranon in the first place; then to cut the lateral ligaments of the joint, so as to free the extremity of the humerus, and saw it off; lastly, to detach, by means of cutting-pliers, the head of the radius, and the remaining part of the sigmoid cavity. The reason for not separating at once the whole of the ulna that requires to be removed is, that, in case it is divided below the insertion of the *brachialis internus*, its removal becomes extremely difficult. Having experienced this inconvenience in one of my first cases, I have since always proceeded as has just been described, and never found any difficulty in detaching the coronoid process after gaining the free space that was afforded by removing the olecranon.

"A simple longitudinal incision will not give sufficient access to the joint to allow of its excision, even in a sound state of the parts, much less when they are thickened and preternaturally adherent, as in cases of caries. An additional transverse cut was therefore proposed by Mr. Park, intersecting the other at right angles; but this plan labours under the double objection of splitting the triceps, and not permitting free exposure of the humerus. A method still more objectionable, on the ground of unnecessarily injuring the muscles, is to make a longitudinal incision, and two transverse ones at its extremities, so as to form two lateral flaps. By far the best plan that has yet been contrived, is that of Moreau; and though it may appear at first sight complicated and destructive to the soft parts, it is really the easiest and least injurious that can be imagined." In making the transverse cut, which should be close above the olecranon, the ulner nerve is apt to be wounded or divided; and though the facts mentioned below make this injury appear of very little consequence, as there can be no advantage in inflicting it, the surgeon ought to use the precaution of ascertaining the situation of the nerve before introducing the knife. The thickening of the limb is sometimes not so great as to prevent the nerve from being felt, but more frequently its situation can be discovered only by recollecting its position relatively to the bones; it lies close to the inner edge of the olecranon, and will certainly be cut if the transverse incision is prolonged further than this towards the internal tuberosity of the humerus. The surgeon, therefore, ought to feel for the olecranon, and introduce his knife close to its upper surface, with the back turned towards its inner margin, but somewhat nearer its radial side. Having thrust the knife down into the joint, he ought to cut transversely, with a sawing motion, so as to insure the division of the tough tendinous parts, until he arrives at the radial tuberosity of the humerus. He may then make the longitudinal incisions, which

should extend about an inch and a half upwards and downwards, without any danger whatever, as the oblique course of the nerve recedes from the line of division. Both flaps should be dissected previously to commencing the excision of the bones, and it is thus rendered much easier than when the exposure is confined to the part that is to be first removed. The hæmorrhage is generally profuse immediately on the incisions being made, but soon diminishes, and seldom persists to such extent as to require the application of a ligature; on the principle already stated, however, it is right to secure any vessel, however small, that threatens to continue to bleed. In those rare and perplexing cases, where the ulna is diseased below the coronoid process, and requires to be divided through its shaft, the interosseous artery is very apt to be divided, and must, of course, be tied. As to the humeral artery, it is always perfectly safe, being protected from injury by the whole thickness of the *brachialis internus*.

"There is a great variety in the difficulty which is experienced in performing this operation in different cases. The adhesions are sometimes so general and so firm that no way can be made without the knife; while, at other times, the suppuration has, as it were, already dissected the bones, so that the surgeon, after making his incisions, has little to do but to apply his saw and pliers for their removal. When the operation is concluded, the edges of the wound are to be stitched together; the limb ought to be half bent, and a long roller applied in the figure of eight to give it proper support."

In the operation on the knee—

"The patient being laid on his back, the surgeon should rapidly divide the integuments and other parts exterior to the joint, so as to open its cavity, and remove the patella. Having next cut the lateral ligaments, he may readily protrude the extremity of the femur, and saw off as much of it as seems necessary. He has lastly to take away the diseased part of the tibia, which can now be done very easily, by passing the knife round the head of the bone, so as to detach its connexions, and then sawing off a slice of the requisite thickness.

"During this process, the popliteal vessels may seem to be in danger, but really are not so—as the insulation of the bones is not performed until the ligaments which connect them together are divided, and no longer oppose their being separated from each other, so as to be more distant from the vessels. There is not much bleeding; but one or two of the articular branches may require to be tied. After the operation, a great difficulty has been experienced in bringing the limb into a straight position, owing to the contracted state of the flexor muscles, which still prevent extension, notwithstanding the relaxation that is afforded by shortening the bone. In this case, the surgeon must be satisfied with placing the limb on a double inclined plane, in as good a position as can be obtained by moderate force, exerted through the means of paste-board splints. In a few days it will be found that the tension gradually diminishes, and before long allows the leg to be completely straightened.

"During the cure it does not seem proper to insure absolute rest, in order to obtain a true ankylosis or osseous union, since the very long bone that would thus be formed, besides being extremely inconvenient to the patient, by rendering the limb perfectly rigid, could not fail to expose it to a great risk of fracture, by affording long levers to forces acting at the extremities. A great degree of flexibility, on the other hand, would unfit the limb for support and progressive motion, so that, while perfect immobility and free motion ought to be avoided, a slight degree of flexibility ought to be promoted. The chief difficulty of the cure consists in preventing the tendency to bend outwards, which is always strong, and, if not counteracted, most injurious to the appearance and usefulness of the limb. The best mode of opposing this distortion consists in the careful application of splints."

We have thus presented to the reader some of the most valuable features in this publication; the operation recommended has been so seldom performed in this country, that though we cannot advocate the practice upon personal experience, yet we think it worthy of candid consideration.

XX. *Practical Observations on Prolapsus of the Rectum.* By FREDERICK SALMON, F. R. C. S. &c. &c. London, 1831. pp. 105, 8vo. Plates IV.

Prolapsus of the rectum, notwithstanding its frequent occurrence and painful character, has not attracted the particular attention of the profession. This may have arisen, as is suggested by Mr. Salmon, not from a want of inclination on the part of practitioners to acquire a proper knowledge of the subject, but rather their inability to obtain it, owing to the meagre accounts of it usually presented in medical writings, and to the disinclination of patients to declare its existence till fully developed, thus precluding all opportunity of studying its different stages. We were therefore glad to see the announcement of the work whose title we have given, trusting that it would supply us with such information on the subject, as would prevent our approaching this disease with distrust and uncertainty. In this expectation, we have not been disappointed, and Mr. Salmon is entitled to the thanks of the profession for the physiological manner in which he has considered the disease in question, grounding his observations on the only true basis, practical experience. Something is even gained by his denominating the complaint what it in reality is—prolapsus of the rectum; and not prolapsus ani, a name which involves a contradiction of terms.

As the work may not fall into the hands of many of our readers, we will give as full a view of the author's facts and opinions, as is compatible with our limits. He first gives a sketch of the healthy and morbid anatomy of the rectum. On the first, as he offers nothing new, we shall not dwell, except in noticing the following observation:—

“The external and internal coats are connected by cellular tissue. When the rectum has suffered from long-continued irritation this uniting medium is so much increased, that in extreme instances it forms an artificial coat between the mucous and muscular portions of the bowel. From the same causes, the internal coat of the intestine participating in the irritation, becomes thickened and elongated, so that its folds, anatomically denominated the columns of the rectum, are materially increased in size. Now both these are usually produced before any extensive prolapsus of the bowel occurs.”

The mucous coat of the rectum, which is continuous with the fine skin lining the sphincter, is also more or less elongated in the early stages of prolapsus, sometimes only protruded on the discharge of the feces, whilst at others it forms pendulous flaps, which become larger when they are irritated. As the disease advances, the natural appearance of the parts is wholly changed, and an irregular fleshy mass makes its appearance on any exertion of the abdominal muscles. In this state, its appearance varies very much, both in form and colour, giving rise in some cases to a suspicion of cancer.

The author divides the causes of prolapsus into constitutional and local; among the most common of the first of which is costiveness. The presence of accumulations of fecal matter in the rectum, not only is a cause of general and local irritation, but also by the distention they cause, induce a permanent elongation of its mucous membrane. Prolapsus may also arise from the opposite state; the violent straining attendant on diarrhœa, not only causes a distention of the sanguineous vessels of the intestines, but also induces chronic inflammation, and the thickening already spoken of. This disease may also arise

from a deranged condition of the liver, and such cases are distinguishable by the colour of the prolapsus, which presents a bluish appearance from the engorgement of the minute hæmorrhoidal vessels. It may likewise be caused by indigestion, general debility, want of due attention to diet, &c. A very fruitful source of it, is a sedentary employment, hence its prevalence among females. It may also be brought on by a protracted and violent action of the abdominal muscles, as hard riding, parturition, &c. The local causes are, any circumstance preventing a free evacuation of the rectum, as piles, calculus, &c.; in children, worms are a common source of it. It may result from local injury to the bowel; from a morbid condition of the external sphincter ani; but the most usual cause of the disease is a contraction of the gut itself, which not only offers a permanent obstacle to the action of the intestine, but also prevents a free return of blood through the part. Mr. Salmon next details the symptoms of this distressing complaint, and observes, although when in its confirmed state, they are clear and decisive, it often happens that they are so obscure at first, that the patient is not aware of the existence of the disease, attributing his difficulty in passing his evacuations to costiveness, and hence resorting to purgatives; but this difficulty soon increases, and a sensation of distention just within the sphincter is experienced, discharges of blood now begin to make their appearance, and the disease is pronounced to be piles. At this time the patient also experiences pain in one or both hips, extending to the lower extremities, being particularly felt across the insteps, or in the calves of the legs. Before long, any attempt to evacuate the bowels, causes acute pain at the sphincter, with a sensation of something protruding, which retires on the cessation of the effort, and excites but little attention, till a portion of it becomes strangulated, and requires to be returned. In this state patients will go on for a great length of time before applying for medical assistance. After this the disease rapidly increases, and becomes excessively painful, and from its magnitude prevents the passage of the smallest evacuation without acute agony; and at last will descend on the slightest exertion, or even spontaneously, so that it is obliged to be retained within the sphincter by mechanical means.

In the succeeding chapter the author takes up the treatment, and observes, that our first object should be to remove or mitigate the disease without a recurrence to an operation. Our success in this, however, will depend on the cause of the affection. If it has arisen from general causes, and is unconnected with any local derangement, the cure may often be effected by very simple means. Thus, the patient must be interdicted from any recreation or employment likely to have occasioned the disease. Attention must also be paid to the condition of the stomach and bowels, and care taken that the quantity of food be moderate, and that none of an astringent nature be allowed, especially rice, high-seasoned meats, crude vegetables or fruits, as well as fermented liquors, and excessive indulgence in wine. In the management of the bowels, although costiveness should be scrupulously guarded against, no medicine ought to be administered of an irritating character, as the drastics, and more especially aloes; on the contrary, the purgatives chosen should be of the mildest character, and given in the smallest possible dose. The state of the liver is not to be overlooked, as in most cases of chronic prolapsus of adults, the functions of this viscus are more or less at fault; hence this organ must be restored to a normal

condition by venesection or local blood-letting, and alterative doses of mercury. If the digestive functions are impaired, we may recur to some of the bitters combined with small doses of the alkalies. Daily exercise on foot or in a carriage is indispensable; when the latter is used, a seat of cane net-work, or an air cushion should be used, as it is of the utmost consequence to prevent any determination of blood to the parts. As regards the local treatment, Mr. Salmon gives ample instructions, which we shall cursorily notice. He is highly in favour of a proper use of enemata, but at the same time protests against the habit of employing large injections on every trifling occasion: he says that the quantity should not exceed a pint, and even half this will often suffice. He prefers the gum elastic bottle and pipe to any other instrument for this purpose. Astringent washes are useful in the first stages. Leeches to the anus are very beneficial, especially where the liver is disordered. The use of opiate suppositories, or sedative lotions to the orifice, are also very useful in relieving the irritability of the sphincter. In the ulcerative stage, chloride of lime, in the proportion of half a drachm to a pint of water, a third of which is to be used night and morning as an enema, will lessen local irritation and correct the offensive odour of the discharge. Bandages are often required as a local support, where the removal of the tumour is contra-indicated. The most essential point is to ascertain whether there is not a diminution in the calibre of the intestine, as if this exists, any attempt to cure the prolapsus will be useless. This contraction does not always exist near the orifice; in fact, prolapsus can scarcely take place when the latter is the case, as there will not be sufficient mucous membrane below the stricture to be protruded. The state of the rectum ought to be examined in every case of prolapsus, as this examination can never be productive of any possible injury.

Mr. Salmon next enters on the consideration of the various operations required in the cure of prolapsus, the first of which he notices is division of the sphincter; this must be resorted to when the muscle is so strong as to become a permanent obstacle to the function of the bowel. This state of things, it is true, may sometimes be remedied by the use of the bougie or the plug, but permanent relief is only to be expected from a division of the sphincter. This may be done either by a simple incision, or by the removal of a triangular portion of it. Where the muscle is narrow the first is sufficient, but when it is very broad, the latter should be had recourse to.

To ensure the success of the operation, we must be cautious not to allow the wound to heal from its edges, and in order to prevent any contraction after its cicatrization, a plug should be occasionally introduced. We cannot give the mode of operating as the author refers to plates of instruments invented by him for the purpose. The next surgical operation spoken of, is the removal of the tumour. For this purpose he infinitely prefers excision to the use of ligatures, as being more certain and less painful, the only objection to it being the danger of hæmorrhage, and this he thinks he is able to obviate by a plan devised by himself, which he says has been eminently successful. It is as follows—the patient being placed in a proper position, one or more long pins are to be passed from above downwards transversely through the basis of the tumour, to prevent the return of the intestine after the operation is performed. The prominent parts of the tumour are then to be seized by a hook or forceps and drawn

gently to the opposite side, and with one stroke of the scissors, the part is to be removed as deep as the division between the mucous and muscular coats; the latter must be left entire, or there will ensue a permanent difficulty of evacuating the bowels; all the protruding portions are to be thus taken off. Any material bleeding is to be checked by cold, &c. The pins are to be left for an hour or two, to permit the blood to coagulate in the extremities of the divided vessels, before the bowel is restored to its natural situation. When they are removed, the rectum is to be returned within the sphincter in the gentlest manner. The after treatment is perfect rest, liquid and rigid diet, &c. The recovery is generally rapid, not requiring more than a week or ten days. Sometimes, however, a ligature is obliged to be adopted; this should be of the finest silk, and should be passed as is recommended by Dr. Rousseau, of this city, in cases of hæmorrhoids, through the tumour, so as to divide it into two or more parts. The ligature is much more apt to create local and constitutional mischief than is caused by excision, and is not as likely to give permanent relief.

Mr. Salmon next makes some observations on that common disease, the *proidentia recti* of infants. This is to be combated by astringent lotions and a proper bandage, and care taken to prevent costiveness, though the author with great truth, reprehends in the strongest manner the prevailing custom of purging children on every occasion. This plan will not always relieve the prolapsus, as it may be occasioned by worms, which are to be expelled by the usual means. Mr. Salmon speaks favourably of injections of spirits of turpentine.

A number of cases illustrative of the different forms of the disease are related.

R. E. G.

XXI. *An Essay on the use of Nitrate of Silver, in the cure of Inflammations, Wounds, and Ulcers.* By JOHN HIGGINBOTTOM, Nottingham, Member of the Royal College of Surgeons of London. Second edition, much improved and enlarged. London, 1829. pp. 204. 8vo.

The observations of Mr. Higginbottom respecting the therapeutic properties of nitrate of silver, are not only exceedingly interesting, but also possess, in several respects, the merit of novelty, and we shall therefore lay a pretty full account of them before our readers. We have had ourselves little experience with the remedy employed in the mode recommended by our author, his essay, by some accident, never having reached us until a few weeks since, but are disposed however to place much confidence in the facts related by Mr. H., his experiments having been extensive, and apparently conducted in a proper spirit; and although something must of course be allowed for the zeal and enthusiasm of a discoverer, and Mr. H. appears to consider the nitrate of silver as a real panacea, still little doubt can be entertained but that it is a valuable remedy in many local diseases in the treatment of which it had not been previously used, or had been improperly applied.

Mr. H. protests at the very commencement of his work against the application of the term *caustic* to the nitrate of silver, since he says instead of destroying, it frequently preserves parts which would inevitably slough except for the extraordinary preservative powers of this remedy. The principle then upon which Mr. H. sets out, is that nitrate of silver possess the property of *subduing*

external inflammation, and to effect this in some cases, it is sufficient merely to blacken the cuticle, in others it is necessary to induce a degree of vesication, which is however less irritable than that caused by cantharides, and in others to produce an adherent eschar. As to the *modus operandi* of the remedy, the author affords us but little light; his object, however, he states is simply to ascertain and state practical facts, and in this we shall follow him.

When it is desired to produce vesication with the nitrate, the part must be first washed with soap and water, and dried; then again moistened, and a long stick of nitrate of silver be passed a few times over, not only every part of the inflamed skin, but also the surrounding healthy skin to the extent of an inch or more beyond it, in severe cases. The part is to be exposed to the air to dry, and is to be kept cool. In twenty-four hours, if the nitrate of silver has been properly applied, it will be frequently observed that the inflammation has subsided, and its progress checked; but if there be any inflamed spot left untouched, the patient will complain of it. To every such spot the nitrate of silver must be applied. At this period there is usually a little vesication. On the third day there is generally more vesication and less swelling, and the patient complains of a little pain, as that of a blister; but the part on pressure has a puffy feeling, and is found to be quite free from inflammation. On the fourth day the vesications begin to disappear, the exuded fluid drying in crusts, which should be allowed to drop off spontaneously. On the fifth day these crusts separate, leaving the subjacent parts free from soreness and inflammation. It is sometimes a number of days before the whole of these crusts peel off, but it is best to leave them undisturbed.

It is not, however, as a remedy in external inflammation alone, that Mr. H. extols the nitrate of silver; he states in general terms that it is equally useful as a means of inducing the healing process or adhesive inflammation, in recent wounds, whether incised, punctured, or bruised. In incised wounds he says that union by the first intention is frequently secured by the application of the nitrate of silver on the surrounding cuticle—in punctured wounds union is promoted, and suppuration prevented—in bruised wounds, the action of the parts is so modified that their texture is often preserved unbroken, and sloughing which would otherwise inevitably have taken place, obviated. In neglected punctured wounds, attended by ulceration, pain, swelling, and fungous growths, and in cases in which there would have been destruction of the parts, as in deep-seated inflammation of the finger, the nitrate of silver has a most decided effect in checking the inflammation, in preventing that destruction of parts, and in inducing the healing process. In ulcers which are rapidly spreading, attended with severe and extensive inflammation, this remedy has frequently an immediate effect in subduing the inflammation and in inducing the healing process. In those cases of inveterate and obstinate ulcers of the legs which have been for years unhealed, attended by sleepless nights and painful days, the nitrate of silver, applied under peculiar regulations, has extraordinary powers in relieving the pain and inducing sleep, even from the first time of its application; and eventually in healing the ulcers themselves, and effecting a more firm and durable cicatrix than any other mode of treatment.

For the attainment of these various objects, Mr. H. applies the nitrate of silver in three different modes; 1st, to form an adherent eschar; 2d, when this is

impracticable to produce an unadherent eschar; and 3d, when neither of these can be effected, the use of the nitrate is combined with that of an emollient poultice.

The remedy is employed in the first method indicated, upon the principle that wounds and ulcers infallibly heal, whenever an eschar made over their surface, can be preserved adherent.

"To the surface of the wound the eschar supplies a complete protection and defence, and allows the healing process to go on underneath, uninterruptedly and undisturbed. It renders all applications, such as plasters, totally unnecessary, as well as the repeated dressings, to which recourse is usually had in such cases; and it at once removes the soreness necessarily attendant on an ulcerated surface, being exposed to the open air. In many cases, too, in which the patients are usually rendered incapable of following their wonted avocations, this mode of treatment saves them from an inconvenience which is to some of no trifling nature."

Mr. H. lays great stress upon the importance of preserving the eschar adherent, and avoiding all causes which might detach its edges. To secure this adherence more effectually, he protects the eschar by covering it with gold-beater's skin. It is applied by simply moistening the skin surrounding the wound by a drop of water, and then applying the gold-beater's skin over it and the eschar, to which it soon adheres firmly, and from which it may be at any time removed by again moistening it for a moment with water.

"In this manner, in cases in which there would be much and long-continued irritability and pain, as in superficial wounds along the skin, all this suffering, and its consequence in disabling the patient, are completely avoided. A blush of inflammation forms around the eschar, but this gradually subsides without any disagreeable consequences, and the inflammation which would otherwise have been set up, is entirely prevented by the due formation of the eschar. In my earlier experiments I observed this fact; but since that time I have always applied the nitrate of silver on the surrounding skin, and beyond any inflammation which might be present, or which might supervene."

The advantage of healing by eschar, over that by scabbing, as employed by John Hunter,* Mr. H. asserts to be very decided, and that he has found by comparative trials, that whilst the scab is irritable and painful, and surrounded by a ring of inflammation, the adherent eschar becomes totally free from pain and inflammation, and that whilst the scab remains attended by inflammation and unhealed, the eschar is gradually separating, leaving the surface underneath completely cicatrized; finally, that the plan of healing by eschar is infinitely more certain, and more speedy, than that by scabbing. We can say nothing of this from our own experience; but it appears to us that the nitrate of silver must act in such case principally by coagulating the discharges from the wound, and thus securing the formation of a crust, which unassisted nature does not always effect; and no one can for an instant doubt the superiority of this method over that employed previous to the time of John Hunter, viz. the application of balsams and a farrago of stimulants.

In recent injuries, and in very small ulcers, attended by little inflammation, the eschar is generally adherent; in other cases, it is too apt to be unadherent,

* See his work on the Blood. &c.

arising from the formation of pus, or of a scab underneath. If pus forms, rendering the eschar unadherent, which may be determined in the space of twenty-four hours, a small incision is to be made into the centre of the scab, with any sharp-pointed instrument, the fluid gently pressed out, and the nitrate of silver then applied to the orifice thus made. The same plan is to be adopted if the fluid ooze out at the edge of the eschar; it is to be fully evacuated by pressure, and the orifice is to be touched with the nitrate of silver. If the eschar be very large, and there are several cavities with pus, it may be necessary sometimes to make several small incisions in an eschar, but the healing process goes on best when the orifice thus made is in the centre of the eschar. In this manner, the eschar is occasionally rendered adherent; but more frequently the fluid requires to be repeatedly evacuated, and this should be done once a day, taking care that the eschar be not needlessly separated by allowing the fluid to accumulate. If the eschar be accidentally separated before the ulcer is healed, Mr. H. advises the nitrate of silver to be applied anew. At length the eschar becomes adherent, and in due time it peels off, leaving the surface healed.

When the purulent matter is allowed to remain too long under the eschar without being evacuated, a scab forms underneath the eschar, this is attended with pain and inflammation, the eschar does not separate but remains long over the sore, and there is no appearance of healing. In this case, the whole must be removed by the application of a cold poultice for two or three days, which removes the eschar and allows the inflammation to subside, after which the nitrate of silver must be reappplied. The gold-beater's skin is even more necessary, as a protection to the unadherent than to the adherent eschar, the former being more liable to be torn off than the latter.

Mr. H. does not recommend this treatment in all cases indiscriminately; on the contrary, he says that it is improper to employ the nitrate of silver, with a view of healing by eschar, in large ulcers, or wounds which do not admit of the formation of a complete eschar, or where the ulcer or wound is so situated as to render it impossible that the eschar should remain undisturbed, as between the toes, unless, indeed, the patient be confined to bed.

In such cases Mr. H. recommends the application of the nitrate of silver, and then a poultice, and this from day to day according to circumstances, until at length, by the subsidence of the inflammation, and the cicatrization of the ulcerated surface, the case may admit of the formation of an adherent eschar, and of the final healing of the ulcer. This plan he says he has found particularly useful in neglected punctured wounds attended by ulceration, pain and swelling, recently-opened abscesses, and in neglected deep-seated inflammations of the fingers. In these cases, he says, it is not only necessary to apply the nitrate of silver to the surface of the sore, but in every cavity or orifice which may be formed by the disease, and also on the surrounding inflamed skin, repeating it as may be necessary. By this mode the pain and swelling are much subdued, and a free issue is secured for the secreted fluid, and Mr. H. has never seen the original inflammation increased by it.

Mr. H. next exemplifies more particularly the beneficial effects of the remedy in several forms of external inflammation, in punctured and bruised wounds, ulcers, and lastly in burns and scalds. The external inflammations to which Mr.

H. considers the nitrate of silver applicable are, phlegmon, whitlow, erysipelas, and inflammation of the absorbents.

In slight cases of whitlow, the application of nitrate of silver over the inflamed part will often prevent suppuration, but when this has already taken place, the abscess should be freely opened, the nitrate of silver applied well within the cavity, and the part then enveloped in the cold poultice and lotion. When the inflammation returns, the application must be repeated, but this is said seldom to occur.

In slight cases of erysipelas of the face, Mr. H. resorts first to every active constitutional means of cure, and if these fail he then has recourse to the nitrate of silver rubbed over the moist skin, in the mode already described, and always it is stated with the result of subduing the cutaneous inflammation, alleviating the pain and heat, preventing sloughing, and relieving the constitutional symptoms. General antiphlogistic measures are, however, to be continued.

In inflammation of the absorbents, Mr. H. applies the nitrate of silver to the ulcer or wound in which it originates, and slightly over the surrounding inflammation, along the course of the inflamed absorbents, and on the surrounding skin wherever there is any swelling.

In recent punctured wounds, Mr. H. directs the orifice to be first examined, and if there be any loose portion of skin closing this orifice, it is to be removed by a pair of sharp-pointed scissors, or by a lancet: the puncture and surrounding skin are then to be moistened with a little water, and the nitrate of silver is to be applied within the puncture until some pain be experienced, and rather lightly, so as not to occasion vesication, to the skin, for an inch round the puncture; and to a greater extent even, if the swelling exceeds that space: the part is then to be exposed to the air. It does not appear necessary to apply the nitrate of silver deep in the puncture; and it would occasion unnecessary irritation. In this manner, says Mr. H. it is astonishing how completely the terrible effects of a punctured wound are prevented. The eschar, indeed, frequently remains adherent, and the case requires no further attention.

“At a later period after the accident,” he continues, “when the puncture has been neglected, some degree of inflammation is usually present, the orifice is nearly closed with the swelling, and a little pus, or fluid, is formed within: a slight pressure will evacuate this fluid. The nitrate of silver may then be applied within the puncture, and over the surrounding skin beyond the inflammation, and must be allowed to dry. In this manner we frequently succeed in forming an adherent eschar, and in subduing all the inflammation. If there be any vesication, it may be simply left to nature: the fluid is soon absorbed or evaporated.

“If there be reason to suppose that an abscess has formed deeply, it must be opened freely by a lancet, and the nitrate of silver is then to be applied within the cavity; a poultice of bread and water, and cold water as a lotion, are then to be applied over the whole. The application may be repeated every second or third day, if the swelling or inflammation require it, and the cold poultice may be renewed every eight hours. I have several times applied the nitrate of silver over an inflamed surface, in cases where I was not aware that suppuration had taken place. Even in these instances an immediate check is given to the surrounding inflammation, and relief to the pain; but in two or three days there is an increase of swelling, attended by some pain, which is not usual, except when there is matter, or some extraneous body, underneath. In these

cases, I make a free incision with the lancet, and apply the nitrate of silver, and a cold poultice.

"In cases of puncture, where the orifice is healed, and where an erysipelatous inflammation is spreading, attended with swelling, I have applied the nitrate of silver freely over and beyond the inflamed parts, to form an eschar; and I have had the satisfaction of finding that the inflammation has been arrested in its progress, and has shortly subsided.

"This mode of treatment is particularly useful in cases of punctured and lacerated wounds from various instruments, such as needles, nails, hooks, bayonets, saws, &c. and in the bites of animals, in inflamed leech bites, in the stings of insects, &c.

"The dreadful effects of punctures from needles, scratches from bones, of wounds received in dissection, and of other similar injuries, are often totally prevented by these modes of treatment. I have for the last seven years had frequent opportunities of trying them in these cases, and have the most perfect confidence in their success.

"In considerable punctured wounds, where an adherent eschar cannot be formed, the nitrate of silver may be applied to the lips of the wound, and over the surrounding skin for several inches, so as not to induce vesication, and the edges of the wound may be brought together by sticking plaster, as in healing by the first intention. This mode of proceeding prevents the excess of inflammation and consequent suppuration, and the wounds have healed nearly as by the first intention."

In some cases where the common mode of pressure by sponge and adhesive plaster cannot be used to stop the bleeding of leech-bites, Mr. H. says it may be effectually stopped by the firm application of the point of a stick of nitrate of silver within the little orifice, continued for a short time. Mr. H. also states that this application to leech-bites, as soon as they have done bleeding, will cause an adherent eschar, and prevent that irritation and erythematous swelling to which some patients are subject. Where there is great inflammation also, several days after the application of leeches, it is quickly subdued by the nitrate of silver, and irritable sores following the application of leeches, heal readily by eschar.

In the treatment of bruised wounds, Mr. H. urges the early application of the nitrate of silver, and states in bruises of the skin he has in every instance effected a cure by the adherent eschar, if this application was made early, unless the skin had been in an unhealthy and discoloured state from previous ulcerations, or in old persons in whom the skin was tender from exposure to the fire, or in whom there was considerable œdema. The difficulty, however, of forming an eschar is always increased by delay. When the patient applies too late after the accident to prevent the formation of a slough, and the slough itself is superficial, Mr. H. removes it with a pair of dissecting forceps and scissors, a practice we conceive which would be "more honoured in the breach than in the observance." It certainly is not consonant with sound principles.

In severe cases of bruise attended by inflammation and swelling, in which the suppurative stage had not commenced, the nitrate of silver must be applied on the bruised, swelled, and inflamed parts, so as to induce an adherent eschar, which is to be exposed to dry. In those cases where a recent bruised wound is too considerable to heal by eschar, the nitrate of silver should first be applied on the surrounding skin for several inches, so as not to induce vesication, and over the wound which cannot be covered by the skin: the skin is then to be brought

as nearly into apposition as may be by means of common adhesive plaster, without any intervening dressing. The plaster will not irritate the skin or wound, for they are protected by the eschar. By this method the wound will frequently be healed by the first intention.

In the treatment of ordinary ulcers, Mr. H. does not recommend the mode of healing by eschar, the attention, discrimination, and experience required on the part of the surgeon, and the necessary care on that of the patient, rendering it rather difficult. Except, therefore, in small ulcers, where there is no inflammation, but little discharge, and the parts not exposed to much friction or motion, Mr. H. has abandoned the practice. In large ulcers, attended with inflammation, he has, however, adopted another plan, which he states to be far more successful, and to require very little attention on the part either of the surgeon or patient.

“If there be swelling or œdema, I direct the patient to take a dose of opening medicine, to apply a common poultice of bread and water over the ulcer, and to keep in bed for four and twenty hours. The inflamed parts must be washed with soap and water, and wiped dry. They are then to be moistened with water, and a long stick of the nitrate of silver must be passed all over the inflamed and ulcerated surfaces, twice, and rather more freely on the ulcer itself, and on the surrounding skin. Lint must then be put on the ulcer, and the whole of the inflamed and ulcerated parts must be covered with the neutral ointment,* spread on linen; a compress of five or six folds of fine linen is then to be applied over the ulcer, and a common roller, not too tight, to keep on the whole. The leg is to be examined on the fourth day, when it will be found that the inflammation is nearly, if not entirely gone, and the ulcer is in a healing state. The nitrate of silver must then be applied on the whole of the ulcer, and once lightly over the skin immediately surrounding it, one or two inches in breadth: the lint and ointment are to be applied as before, and the bandage rather tighter. The case must be treated in this manner every third or fourth day, until the ulcer be healed. I would recommend wearing a calico roller for some time afterwards, till the leg has recovered its usual strength. The patient may walk about after the first or second application of the nitrate of silver.”

Mr. H. like most other surgeons, has experienced the difficulty of managing old ulcers of the legs, and found the insufficiency in most severe cases of even the much-approved plan of Mr. Baynton. Mr. H. was therefore led to try various modes of application of the nitrate of silver in these cases, and after many experiments he has finally adopted the following plan.

“The first thing I direct my patient to do in such a case, is to apply a common white bread and water poultice, to keep in bed for eighteen or twenty-four hours, to allow any swelling of the leg to subside, and to take a dose of opening medicine. The leg is after this to be washed well with soap and water, to free it from any oleaginous substance, or loose cuticle; it is then to be wiped dry with a towel, the inflamed part is to be moistened with pure water, and the nitrate of silver is to be passed twice over it, and a little beyond it on the healthy skin; and then, more freely, to every part of the ulcer, and particularly the edges and immediately surrounding skin; a piece of lint is to be put over

* The following is the formula for the ointment here alluded to by Mr. H.—
R. Emplastri plumbi, ℥ij.; Olei olivæ, ℥ij.; Cretæ ppt. ʒxviij.; Aceti distillati, ℥j. The acetic acid and chalk must be well mixed in a mortar, and the lead plaster and olive oil, previously slowly melted together, are to be added. The whole is then to be stirred together until cool.

the ulcers, and linen spread thick with the neutral ointment, over the whole inflamed and ulcerated parts; a compress of linen, and a common calico roller are to be applied in the last place, the latter not tight, but just so as to retain the dressings in their place. The patient is obliged to remain a few hours in bed, on account of the pain occasioned by the application of the nitrate of silver; but after this has once subsided, he enjoys more relief than from any former application, and sleeps soundly all night, for the first time perhaps for years. The dressings are to be taken off at the expiration of the fourth day, the inflammation is then found to have nearly subsided, and the ulcer is become more healthy in its appearance. If any of the plasters adhere, they may remain until the next time of dressing; the applications to the ulcer itself are readily removed, as there is usually a free discharge of lymph from its surface. This discharge is to be simply removed by a little linen or tow; the nitrate of silver is again to be applied all over the wound, on its edges, and the skin immediately surrounding it; and if any of the plaster be detached, and there be any inflamed part, slight sore, or excoriation, those parts are to be slightly touched with the nitrate of silver. About the expiration of three more days, the eschar is found to be detaching itself from the surface previously inflamed, and all the inflammation gone. The patient now makes no complaint, is free from pain, sleeps well every night, is able to follow his employment; there is generally a free serous discharge from the ulcer, free from fetor. The nitrate of silver is again to be applied over the whole surface of the sore, its edges, and the adjacent skin. This plan has the effect of preventing any inflammation of the surrounding skin, or irritation on the surface of the ulcer itself. It is to be repeated every third or fourth day, till the ulcer be healed. When the ulcer is near the ankle, deep, of long standing, and with hardened edges, and with enlargement of the vena saphæna, and swelling of the foot, I have added, to the mode of treatment just described, the treatment by strapping, recommended by Mr. Baynton, and recently improved by Mr. Scott.* The latter gentlemen recommends the emplastrum plumbi, which is not so apt to irritate the skin; but where the nitrate of silver is used, the common adhesive plaster may be used without inconvenience. If any excoriation did arise from any cause, a slight application of the nitrate of silver would induce a firm eschar, and prevent any ill effect. I prefer that the adhesive plaster should be spread upon dimity, which is stronger, and gives more support than the calico."

Mr. H.'s experience in the use of the nitrate of silver in burns and scalds has not been very extensive, yet as far as it has gone it appears satisfactory. He says that by slightly passing the nitrate of silver once over a burnt surface, the pain is increased for a short time, but then totally subsides, vesication appearing to be prevented; the black cuticle peels off in a few days, leaving the part well. In cases in which the cuticle has been removed, the nitrate of silver applied on the surface induces an adherent eschar, and prevents the consequent ulceration. In cases in which a slough covers the surface, Mr. H. removes it, a practice we have already reprobated, and then applies the nitrate of silver, with the effect of producing an adherent eschar and a cure. In one case, in which, after a burn, the part was healed over, and a considerable cicatrix formed resembling a fungus, and attended with severe pain, the nitrate of silver removed all inflammation and pain. In very extensive recent burns, Mr. H. has never had an opportunity of using the nitrate of silver; a case of extensive scald has however been recorded in a late number of the *Edinburgh Medical and Surgical Journal*, which seems to confirm the anticipations of the utility of the remedy entertained by Mr. H.; we shall therefore insert it in our *Periscope*.

In an appendix, Mr. H. introduces some cases of a desultory character which

* This plan will be found described in our Second Volume, p. 407.—*Ed.*

he could not well embody in the work. They relate to the use of nitrate of silver as a blister, in gun-shot wounds, in neuralgia, contracted rectum, ulceration of the tongue, irritable ulceration of the eye, fungous ulcer of the navel in infants, and in the treatment of corns.

A letter from Mr. Webster of Dalworth, and another from Mr. Tobias Browne of Camberwell, in which the writers bear their testimony to having used the nitrate of silver with advantage in various cases, are also given in a second appendix.

Mr. Higginbottom has but seldom used the nitrate of silver as a blister, but in the cases in which he has employed it, he states the effects to have been very satisfactory. He is persuaded that it possesses a decided superiority over cantharides in many cases, causing less irritation, and being more prompt in its action and also as not inducing strangury. It induces a very copious discharge without heat or pain after the first few hours. The vesicated part heals about the fifth day without leaving the least ulceration.

Three cases of neuralgia are related in which the nitrate of silver was applied as in external inflammation, along the course of the pain, with marked relief.

XXII. A Manual of Materia Medica and Pharmacy, comprising a Concise Description of the Articles used in Medicine; with Observations on the Proper Mode of Combining and Administering them: Also the Formula for the Official Preparations of the London, Edinburgh, Dublin, Parisian, American, and most of the Continental Pharmacopæias; together with a Table of the Principal Medicinal Plants. From the French of H. M. EDWARDS, M. D. and P. VASSEUR, M. D. Corrected and Adapted to British Practice. By J. DAVIES, M. R. C. S. Surgeon of the Hert's Militia; late Editor of the London Medical and Surgical Journal, &c. pp. 490. 8vo. London, 1831.

We have heard of a book published in this country some years since, in which the publisher modestly inserted his own name in the title page for that of the author, thus reaping at the same time literary fame and pecuniary emolument; and we have actually in our possession a work translated from the French, with a few additions, in which the author is merely noticed in the preface, as having written a very imperfect book on the same subject, whilst the translator and compiler modestly figures on the title page as the author! These were, however, bungling and easily to be detected attempts at fraud, and are not to be compared to the judicious management exhibited by the editor of the manual, the title of which is at the head of this article. Indeed we do not recollect ever to have met with what appears to be a more ingenious artifice to secure to one's self the credit of other people's labour, without actually laying claim to it, than that displayed in the publication under consideration. We say *appears* to be, for it would be malicious in the extreme to suppose that the surgeon of the Hert's militia could have imbibed so little honour from his gallant associates as to desire to appropriate to himself merit which does not belong to him. We venture, however, to assert that ninety persons in a hundred who would read that work, would receive the impression that Mr. Davies was the translator, and if a suspicion of his not being so, did perchance flash across their minds, they

would, on comparing the translation with the original, and observing the numerous additions, regard him, at least as the author of the latter. And yet this would be entirely erroneous, nor has Mr. Davies any where claimed being either the translator or the author of *all* the additions.

Indeed were Dr. Togno and Mr. Durand to say to Mr. Davies, "Sir, you have taken our translation of Drs. Edwards and Vavasseur's *Materia Medica*, with our numerous additions, without any acknowledgment of your obligations to us—you have published them as being corrected and adapted to British practice by you, and in the preface state your having added some new matter;" he might reply, "Gentlemen, I have made no claims to being the translator, on the contrary, to remove any doubt as to my having taken advantage of your labours, and to enable you at once to prove it, I have carefully preserved in my edition even your typographical errors;—as to correcting and adapting it to British practice, I have mystified your observations on the wax-myrtle so as to render them perfectly unintelligible;—and of new matter I have inserted three paragraphs of nearly four and a quarter lines each, relating to well-known English mineral waters; I have introduced into the list of wines two, (raisin and currant,) and I have also added five notes, making in all thirty-two lines." To all this what rejoinder can Dr. Togno and Mr. Durand make? We hope they will not be so ill-natured as to say that Mr. Davies has exhibited more talents for another profession than for his own, or take advantage of his not having made any positive claim to candour, to deny him the possession of that virtue.

So far, however, as we are concerned as reviewers, it is only necessary for us to state, that Mr. Davies has republished Dr. Togno and Mr. Durand's translation of the valuable *Manual of Materia Medica* of Drs. Edwards and Vavasseur, with a few additions and alterations, the most striking of the latter being the confounding of the additions made by the translators, and even his own three little sentences with the original, so that it is impossible to distinguish what belongs to the authors of the original work, what to the American translators, and what to the English editor, without a careful comparison of the three works; and thus by modestly omitting any distinguishing mark to his own three sentences, Mr. D. actually incurs the risk of having all the additions assigned to himself.

In showing his willingness to father the labours of Dr. Togno and Mr. Durand, he has paid them the highest compliment in his power, and one of which those gentlemen will no doubt be duly sensible.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Anomalies in the Arterial System and in the Ganglionic Nervous System.*—M. JODIN, interne de l'hospice des Enfants-trouvés, describes in the *Journ. Universel et Hebdom.* for June last a very interesting instance of anomalous arrangement of the arterial system and ganglionic nervous system, occurring in a child who died in consequence of imperforate anus, the rectum terminating in a cul-de-sac an inch above the os coccyx. The aorta communicated freely with the pulmonary artery through the ductus arteriosus. It gave origin, before its curvature, to a trunk common to both carotids, which proceeded perpendicularly upwards; at its curvature it gave origin to the left subclavian, and finally to the right subclavian, which arising from the termination of the arch, passed transversely behind the œsophagus in front of the vertebral column, then entered between the scaleni. At the second lumbar vertebra the aorta gave off the celiac trunk, the superior mesenteric, the right renal, (there was no left,) the spermatics, and divided into two branches; the first continuing in the direction of the aorta, and of almost equal size, gave off the inferior mesenteric, ran to the posterior parietes of the bladder in the median line, passed to its summit, and from thence to the umbilicus, where it divided into two branches. It could be injected in this course to within half an inch of the umbilicus. The second branch arising at the posterior part of the aorta, at an acute angle with the preceding, of half the diameter, passed a little to the left in front of the spine, as far as the sacro-vertebral angle. There it dipt into the pelvis, passed between the sacrum and rectum, forming a curve from the left to the right with the convexity downwards, and running upwards again in front of the right sacro-iliac symphysis, to terminate under the crural arch of the same side. In this course it furnished all the branches for the nourishment of the inferior part of the trunk and the lower extremities: 1st, at the sacro-vertebral angle, the right and left lumbar arteries. 2d. An artery distributed to the left lower limb, which corresponded tolerably well to the external iliac artery, taking nearly the same direction, furnishing the same branches, but in addition supplying the iliac muscle with branches, which in the normal arrangement, come from the hypogastric. 3d. Finally, from the convexity of the pelvic curve, successively arose, from the left to the right, most of the branches which are commonly given off by the two hypogastries. The branches which exist are very small and imperfectly developed; the middle sacral artery was entirely wanting.

The great sympathetic accompanied the arterial system in its irregularity—suitably developed at its superior part, it is but slightly so at its inferior, where a sacral ganglion only is found, not the coccygian one.

The cerebro-spinal nervous system did not participate in these anomalies. It was regular and fully developed.

The relator of the case is of opinion that this simultaneous cessation in the

development of the intestine, the bone, the nervous and vascular system occurs more frequently than has been supposed.

The anomaly presented by the superior portion of the vascular system have been several times previously observed, and are delineated in the great work of Tiedemann. The singular disposition of the inferior portion, however, of this system, M. Jodin cannot find described in any of the works on anatomy.

2. *On the Perspiratory Vessels of the Skin.*—Dr. HAKE has published in the *London Medical and Physical Journal*, for July last, some curious researches on the perspiratory vessels of the skin. It is well understood that the exterior surface of the skin is perpetually moistened by the transpiration of a saline fluid: during the spring of 1830, Dr. H. first observed the perspiration on the points of the fingers, “to follow a determinate arrangement, of which the investigation led to the conclusions which follow: at some of them, however, the French anatomist, Beclard, had previously arrived. ‘The surface of the skin,’ says Beclard, ‘presents small wrinkles peculiar to the epidermis in the palms and soles: these are prominent lines, separated by other depressed lines, running in various and winding directions, and which are formed by rows of papillæ.’ “In my notes I have preserved an account which to the above is dissimilar but in language, the facts being the same; but there are some minute points which Beclard probably saw, without copying down: they are as follows.

“1. On submitting the base of the ridge, or prominent line, to the micrometer, its width was found to occupy one-fiftieth of an inch of space, whilst that of the groove, or depressed line, occupied only one three-hundredth part of an inch.

“2. The furrows are concave from side to side, and from their edges, which are distinct, arise the sides of the ridges which meet above at an angle, and thus, with their attached base, produce the form of a prism. The width of either side is about one ninety-sixth part of an inch, but the sides themselves are differently occupied: the one being covered by papillæ which are about one fiftieth of an inch remote from each other, and arranged in a regular series; the other side being occupied by superficial grooves, each of which passes from the porous aperture of a papilla, and descends into the groove: by the latter arrangement, the globule of perspiration which arises through the pore of the papilla, passes also into the groove, and thus is equally diffused over the surface.

“3. By dissecting away the ridge, layer by layer, to the level of the furrow, each new surface presents an opening, which is perpendicular to the spot formerly occupied by the mouth above.

“On first observing these phenomena, there are three circumstances apt to cause deception: 1. Owing to the inclination of the sides of the ridges, the papillæ may appear to be in the furrow. 2. The papillæ, if viewed from the sides which they occupy, seem to be on the summits of, or rather to constitute, the ridges. 3. If the ridges be viewed from the side on which the grooves are, the whole cuticular surface, owing to the meeting of grooves and furrows, looks reticulated.

“The cutaneous surface is, on the back of the fingers, traversed by grooves of many sizes, which frequently, and in all directions, cross each other, so as ultimately to leave only so many spots of uninterrupted surface. When, in order to find out the ultimate design of all this, a powerful lens is preferred, it is soon discovered that the former structure is so deformed as to yield no information; in fact, it will not bear the action of a high magnifier; but a moderate lens, will without any distortion, sufficiently enlarge the field of nature. If a mild perspiration be present, glistening particles of fluid are here and there observed, generally at equal distances from each other; and thus they follow the courses of the grooves, not occupying their cavities, but the summits of their sides; this is the more remarkable on the dorsum of the second phalanx of the fingers, but consequent on the frequency of the decussation of grooves, even there is

often confused. A superficial furrow may be occasionally traced, extending from a pore to a groove, but such is only to be regularly seen on the palms. The pores vary in size; those of the palmar surfaces being larger than on the backs of the fingers, and the latter than elsewhere; were I asked the reason of this variation, my experience would lead me to say, that it was instituted to give passage to a fluid more or less impregnated with saline matter.

"On the back of the first phalanx, the texture of the cuticle is fine and translucent; observing which, I deemed it probable that a microscopic examination might be attended with an useful result: by dint of care and labour, I was delighted with the sight of a few small and exquisitely attenuated vessels, of a red colour: they were directly under the cuticle, to all appearance, and, having emerged, they seemed to creep a little way, then open with red mouths, and become continuous with the epidermis. As far as could be distinguished, each vessel became first visible at a little distance from one pore, and, after a short course, opened to form the next.

"After having soaked the hand in very hot water, and again dried it, I examined the dorsal surface with the weakest power of the simple microscope, and found it regularly studded with aqueous globules, which, while the parts remained swoll, were no sooner removed than replaced. By a sudden and undesigned movement of the lens, a reticular work became visible, which seemed to be of vessels: although this appearance was as evident as if of far greater size, I doubted its reality, lest it should consist of so many grooves, which, in a peculiar light, might have the aspect of elevation; but, on a comparison with such as I knew to be only grooves, the distinction was marked. I have mentioned that there are left between the grooves only so many spots of uninterrupted surface: on these it is that the net-work above-mentioned exists: it is so distinct on the joints as to become visible, by practice, to the naked eye. On these perspiratory vessels I observed numerous projecting points, resembling truncated ramuscles of the prime branch. Under the light requisite to produce these phenomena to vision, the net-work has a beautiful blue colour. At the summits of the sides of grooves, (which on some joints sub-divide in the form of vessels,) it is that the vascular elevation is most conspicuous: one vessel I saw running down the side of a groove. The anastomoses of these vessels seem very frequent, and at different angles, especially at ninety, sixty, and one hundred and twenty degrees. At the apex of each papilla which is given off, the pore was visible if not occupied by sweat, and not of a red colour, like that discovered near the roots of the nails."

"Every one knows that the epidermis at the sides of the nails is much thicker than elsewhere. It was with a view to ascertain whether, and how, the pores are continued downwards, that I removed with scissors many layers of cuticle from those parts, and was astonished to see how well, not only the pores, but the ridges and grooves, maintained their characteristics: however, when the epidermis, instead of being cut, is peeled off the palms, the layer which becomes exposed is precisely similar to that which is removed. But a fact, which I at that time observed, has since often attracted my attention, for I conceive it to be important, although simple: however dry the skin may be externally, as soon as a layer is removed, the pores of the new surface are occupied by sweat. To account for the occasional aridity of the skin, hypothesis has almost, of necessity, urged a spasm of the pores, and sudorifics have been said to have the property of relaxing the contraction. The above experiment demonstrates the point in which the spasm resides.

"Much has been said concerning insensible perspiration. It is true that if the hand be presented to a mirror, its polished surface becomes tarnished; but this is owing to spontaneous evaporation from the excreted fluid. I have watched the progress of perspiration often, and always seen it to arise in a liquid state: nor is there sufficient reason to suppose an additional set of pores for an insensible exhalation.

"The appearance which I have described as resembling a net-work of ves-

sels, I believe to be an elevation of cuticle corresponding to the shape of the vessels beneath, which open at its surface. The thickness of the epidermis on the palms and soles, precludes the possibility of discovering the arrangement of the vessels which lead to that membrane, but we may infer a regular and fixed distribution, from the harmonious order of the pores themselves.

"Whether or not the perspiratory vessels were seen by Kaau and by Dr. Hunter, it must be certain that they proceed from the dermis to the epidermis: from the researches of Malpighi and his successors, it can be no less certain that there are dermoid vessels which open to supply the fluid of, if not to form, the rete mucosum. These facts, had they been considered, might have served in explanation of the question, why the fluid effused beneath the cuticle from blistering does not escape through the pores, although Bichat, as well as Meckel and others, have used hypothesis for its solution. The cantharides, when applied to the skin, acts on the secreting vessels of the dermis, which pour out, in reply to their proper stimulus, a greater quantity of fluid on the cellular tissue which invests its exterior surface, under the denomination of rete mucosum. How then can this fluid enter the porous vessels, which are continued from the dermis, and open only on the surface of the cuticle?"

"With regard to the mode of proceeding, it should be remarked that it is not through a strong, but rather through a weak light, that the objects on the skin are to be seen; that an egregious error is committed by those who use powerful magnifiers; and that those are not less mistaken who have searched for pores on the detached portions of the skin, instead of examining living parts during the performance of their functions."

3. *Malformation of the Uterus*.—M. VIDAL describes a curious instance of this. The uterus was elongated, cylindrical, and had but a single fallopian tube, and a single ovary. No trace of the other fallopian tube or ovary, could be discovered on the most careful inspection. The left kidney was situated in the pelvis.—*Bulletin de la Soc. Anat. Par M. Bérard, Jr. Secy.—Rev. Méd. June, 1831.*

4. *Anomalous arrangement of the Aorta*.—M. CRUVEILHIER exhibited, not long since, to the Anatomical Society of Paris, a case in which the arch of the aorta passed behind the trachea and œsophagus, immediately in front of the spinal column. Four arteries arose from its convexity; nearest to the right side, the right primitive carotid, next the left primitive carotid, next the left subclavian; and nearest to the left side, the right subclavian. This last passed to the right side in front of the trachea and œsophagus.

M. BÉRARD, Jr. at the same time, exhibited another anomalous arrangement of these parts. The arch of the aorta, in its natural position, gave origin to the four arteries first noticed, and in the same order, but the right subclavian passed to the right side between the vertebral column and the trachea and œsophagus.—*Ibid.*

5. *Anomaly in the Pneumogastric Nerves*.—M. BIGNARDI, professor of anatomy at Modena, has communicated to the Anatomical Society of Paris, the dissection of a woman, in whom both pneumogastric nerves, presented in their whole course, a series of ganglions, some as large, others smaller, than the intervertebral ganglions of the spinal nerves, which they also resembled in structure. The great sympathetic on the left side was atrophied, and on this side the ganglions of the pneumogastric were both larger and more numerous. This woman during life exhibited nothing remarkable, except that she had a most voracious appetite.—*Rev. Médicale, June, 1831.*

PHYSIOLOGY.

6. *Mechanism of the Human Voice during Singing.*—M. Bennati some time since communicated to the Royal Academy of Sciences of Paris, a memoir on this subject. The following report of Baron CUVIER exhibits an excellent analysis of this interesting paper.

The intention of the memoir is to make known the part performed by the velum palati, or rather the strait of the throat formed by the velum palati, its arches, and the base of the tongue. We are aware that of the physiologists who have studied the organ of the voice, some have compared it to a stringed instrument, others to a reed instrument. M. Savart has compared it more happily to a kind of bird-call, and has established that the two ligaments of the glottis, and the ventriculi which separate them, take an essential part in the primitive formation of the voice. He has shown, at the same time, that the nature of the walls of the mouth, its internal configuration, and the more or less of tension of the parts which form it, concur in modifying the primitive sound, and can more especially lower it by means which do not consist in the greater or less elevation and depression of the larynx, taken in its totality. M. Savart has not, however, paid attention to the special use of each of these parts, neither has he attended to that of the velum palati. In general, little attention has been paid to this second strait; through which the air which produces the voice, is obliged to pass. Fabricius, of Aquapendente, had, nevertheless, remarked its importance, after having shown that the voice is formed at the larynx, after having made known the relations of elevation and depression of the larynx, and, in consequence, the variations in length of the buccal cavity. This illustrious anatomist also described the variations in width that the same organ undergoes in passing from grave to sharp sounds. Ferriën, long after, appears to have attended to the same considerations, and to have gone further than Fabricius: for, in terminating his memoir on the voice, he says, that the chordæ vocales are not the organs of every kind of voice; that a certain guttural intonation, and a false treble of the same nature, are produced by a new organ, the existence of which he has declared, and which he proposes to make known in a new memoir. The promised memoir never appeared, and thus we know not of what organ he intended speaking; Haller has supposed it to be the velum palati, but, however, he has not said in what manner this organ concurred in forming the voice.

In a thesis sustained at Tubingen, in 1781, M. Hellway stated, that in the false treble, the uvula contracted, whilst it did not change its shape in the ordinary tone. This is, we believe, all that has been said hitherto of the part the velum palati plays in the production of the voice, before the appearance of this memoir. M. Bennati, who joins to the skill of the physician great exercise in the art of singing, and who has one of the finest voices we know of, has paid particular attention to these motions: he has ascertained that the tongue itself, in elevating and depressing itself, or in forming itself into a hollow, exercises a powerful influence on the modulations, and that, in order that the larynx may give any tone, it is necessary that the os hyoides be firmly fixed in a determined position. He has, besides, recognised that the notes improperly called *de la tête*, and false treble, are formed almost exclusively by the labour and the strongest contraction of the superior part of the vocal canal. He names them, in consequence, *super laryngeal*, and calls their union *the second register*, to distinguish them from the notes said to come from *the chest*, and which he had rather call *laryngeal*, and their *ensemble*, the *first register*. He does not mean to say, by that, that the larynx does not aid in forming the one, nor the throat the other; but he wishes merely to show the more essential part that the throat takes in forming those of the *second register*. In regard to the *third register*, of which some works on singing speak, he regards it as imaginary, and owing simply to the vibration, more or less powerful, of the last notes

of the first, and of the first notes of the second. Those singers whose voices are composed of *two registers*, have need of more art to manage the transition from one register to the other, so as to unite them in the ear, and are more easily fatigued than others.

7. *On the Connexion between the Maternal Vessels and Cord.* By S. C. HOLLAND, M. D.—The following experiments were performed in order to ascertain, if possible, the nature of the union existing between the maternal vessels and the cord. Some physiologists are said to have succeeded in passing injections from one to the other, proving, as they imagine, a direct connexion; but so many probable sources of error have been pointed out in their experiments, that the conclusions drawn from them are little to be depended upon. At one time substances have been injected which emit a strong odour; at another, such as do not combine with the blood, as oil. Mercury, and the ordinary coloured injections have occasionally been used. There are great objections to the employment of all substances, except the two latter, and these are not altogether unexceptionable. When camphor is conveyed from the maternal vessels to the placenta, it is quickly absorbed and carried with the blood into the cord or fetus. We have no means of ascertaining the time necessary for its absorption. This will depend on circumstances with which we are imperfectly acquainted. "When a quantity of camphor," observes Majendie, "is injected into the veins of a dog, the blood soon takes a strong odour of camphor. After having made this injection into a bitch with pups, I extracted a fœtus from the uterus; at the end of three or four minutes its blood had no odour of camphor; only a second fœtus, extracted after a quarter of an hour, had a strong odour of camphor. It was the same with the other fetuses."*

On account of the rapid absorption of substances which are sometimes injected, we are scarcely entitled to conclude, from their presence in the fœtus, that a direct connexion exists between the vessels of the uterus and the cord. The employment of mercury or the ordinary coloured injection, is not entirely free from fallacy. If the connexion between the maternal vessels and the cord is *indirect*, or in other words, if the blood which is poured into the placenta from the uterus, is absorbed by the minute ramifications of the umbilical vein, in place of circulating in a continuous current to the fetus, it is nevertheless obvious that those vessels which absorb, have open mouths in the direction of the uterus, whence the injection is transmitted, and, consequently, may, immediately after death, or whenever the vessels are similarly circumstanced, allow the propelled fluid to enter them. Beclard succeeded in injecting the uterus from the vessels of the cord in a woman who died during gestation. Experiments of the same kind have been repeatedly made by other physiologists, on the lower animals, but not with the same results. If, indeed, we grant that the experiment has been successful, in one or two instances, the positive evidence which can be produced is so equivocal in its nature, that it is wholly insufficient, in the face of numberless experiments of a contrary bearing, to establish a *direct* connexion. The arterial blood in the general circulatory system terminates in veins, and, if we consider the nature of those vessels of which the cord is formed, and the manner in which the blood circulates in them, we shall observe the same fact. The arterial blood which flows into the placenta from the uterus, is conveyed by the umbilical vein into the fœtus, and the venous blood which is poured into the placenta by the umbilical arteries, is carried into the system of the mother by the veins of the uterus.

Experiment I.—A rabbit, about the end of gestation, was killed by prussic acid. A quarter of an hour after death, the tube of the mercurial injecting apparatus was fixed to the inferior portion of the aorta, immediately before its bifurcation into the iliac arteries. In a few minutes a great number of small vessels on the external surface of the uterus, were observed beautifully inject-

* Trans. by Dr. Milligan p. 508.

ed. The process was carried on for about three-quarters of an hour, at which time it was necessary to discontinue it, in consequence of several vessels being ruptured. On opening the uterus, the maternal portion of four placenta were found considerably injected, as well as a few vessels on the fetal portion of two of them. No mercury whatever had passed into the vessels of the cord.

Experiment II.—The object of this experiment was to ascertain, whether it were possible to inject the whole of the placenta and the vessels of the cord, with a very finely coloured composition injected from the inferior part of the aorta. A bitch, apparently within a few hours of pupping, was killed by prussic acid, and the experiment was immediately commenced. The results of the experiment were not examined till the following day. All the placenta were most distinctly and beautifully injected. The vessels of the cord had received no part of the injection. Injected vessels were readily traced from the uterus into the placenta. The best mode of showing this, is to tear, under the water, the placenta gradually from the uterus. The results of this experiment were observed by my friends Drs. Knight and Favell, and Messrs. William Jackson, James Ray, and Samuel Gregory, surgeons.

Experiment III.—A cat, near the end of gestation, was killed by the prussic acid, and left undisturbed for about two hours, it was then immersed for an hour and a half in warm water, after which a very fine injection was transmitted through the inferior portion of the aorta. Two days afterwards, one of the arteries going from the kitten to the placenta, was injected with mercury. On examining the placenta, the fetal portion was found to have received a considerable quantity of the coloured injection. The whole of the fetal surface presented a multitude of small vessels of an arborescent appearance. The vessels of the cord were in a natural state. The vessels of the fetal portion were fully injected with mercury. No connexion, however, could be traced between the two different kinds of injected vessels.

Many experiments were performed on each of the fetuses, to ascertain the nature of the connexion between the uterus and the cord, which are not related, because the results were precisely the same as those which are given.

In the first experiment there is nothing particularly worthy of observation, except the injected vessels on the fetal portion of the placenta. In the second experiment, the coloured injection had succeeded remarkably well. The vessels of the cord were, however, not in the least injected. The results of the third experiment are extremely interesting. In appearance, the whole of each placenta was fully injected, nevertheless, a great number of vessels on the fetal portion became very soon visible, on the employment of the mercurial injection, showing that the coloured fluid had penetrated only one set of vessels.—*Physiology of the Fetus, Liver, and Spleen.*

8. *Case of complete absence of the Cerebellum, together with the Posterior Peduncles, and protuberances of the Cerebrum, in a young girl who died in her eleventh year.*—Communicated by M. COMBETTE, resident in the hospital of St. Anthony, (Service de M. Kapeler.)—Alexandrine Labrosse was born at Versailles, in May, 1820. Her father possessed a strong and robust constitution, but her mother was weak and unhealthy, and moreover, accustomed to excesses of every description. This child was very feeble when born, but well formed—she continued extremely delicate and puny, and grew but slowly. She had not cut her first teeth at two years of age, and it was only after she had reached her third year, that she began to lisp a few words. M. Miquel, to whom I am indebted for these particulars, saw her for the first time in 1827, when he was informed by her father that she was five years old before she could stand alone. He was astonished at her small size, and remarked particularly the great feebleness of the extremities. This symptom, joined to the want of intelligence in the child, and the impossibility of her articulating a word clearly, had induced M. Miquel to suspect some injury in the brain. He was several times called upon to prescribe for gastro-

intestinal irritations, although these presented no remarkable peculiarities. The last time he saw her, which was after her ninth year, he found the pupils extremely dilated, from which he was led to suspect the presence of worms in the intestinal canal. He was about to direct anthelmintics, when the nurse informed him that the little patient kept her hands constantly applied over the genital parts.

On the 12th of January, 1830, she was admitted into the Hospital des Orphelins, as a forsaken child. Her certificate of admission represented her as paralysed in the abdominal extremities, speaking with difficulty, and that her disease was owing to a fright experienced by her nurse.

In the letter addressed to the superintendant, requesting her admission, M. Miquel observes, "this little girl, although nine and a half years old, in consequence of the poor nourishment and little care she had received, is scarcely as large as a child of six years: this cause has arrested the development of both her physical and moral faculties."

At the time of her entrance into the Orphelins, she was feeble, cachectic, and possessed of very little intelligence. Apparently indifferent to every thing surrounding her, she nevertheless manifested friendship and gratitude for those who rendered her any attentions. When spoken to, she replied with difficulty and hesitation. Her limbs though extremely feeble, yet allowed her to walk, but she often fell down. She possessed the use of all her senses, eat moderately, and all the functions of nutrition were well performed.

In the month of January, 1831, when seen by M. Combette, her condition was as follows: Her features indicated a deteriorated constitution, and possessed an air of stupidity. She lay constantly upon her back, with her head inclined to the left side, and she could scarcely move her limbs; which, however, exhibited no diminution of sensibility. She had the free use of her hands. Her condition always manifested depression and dullness, and she seemed alike indifferent to both pleasure and pain. When questioned, she replied simply *yes* or *no*, always however, correctly.

For a long time she had been subject to glandular engorgements about the neck, and especially near the parotids, and for a fortnight had a carbuncle of no great size or violence, situated on the right buttock. On the three outermost toes on the same side, there existed an ulceration accompanied by a livid redness, from which there was a very abundant discharge of extremely fetid pus.

Towards the middle of February, along with her other infirmities, Alexandrine Labrosse had stomatitis, (as had many other children in the hospital,) complicated with symptoms of enteritis. After this she grew daily more and more feeble, exhausted by an incessant diarrhœa.

She died on the 25th of March, 1831. Since her death, I have been positively informed, that she was addicted to the habit of masturbation. The sisters have also assured me, that she was subject to epileptic convulsions, and that a few moments before death, she had experienced a violent general convulsion.

Autopsy thirty hours after death.

External Habit.—Body lank and emaciated. Skin discoloured. Large slough over the sacrum. A small livid wound on the right buttock, occasioned by the incisions I had made. The three diseased toes had a blackish and gangrenous appearance. Scrofulous engorgements upon the neck.

Head.—Under the integuments of the cranium near the parietal protuberance of the right side, an ecchymosis existed about the size of a dollar. The cranium was rather thicker than usual. The meninges of the brain appeared healthy. The cerebrum appeared in a natural condition, except that it seemed to me comparatively very large. Dissected subsequently by M. Magendie, a small sanguineous effusion was found in the left posterior lobe, which did not appear to have existed long, and which was not more than two or three lines in diameter. The covering of the cerebellum being divided, the medulla oblongata cut at the occipital foramen, and the encephalic mass raised and inverted—the following appearances were observed:

A large quantity of serum was discharged, filling the occipital fossæ. In

place of the cerebellum, I found a gelatinous membrane of a semicircular form, attached to the medulla oblongata by two membranous and gelatinous peduncles. The one of these on the right side had been torn. Near these peduncles I found two small white isolated masses about the size of a pea. On one of these was found one of the branches of the fourth pair of nerves. The tuberculi quadrigemini were entire. On the posterior and inferior side there was the appearance of an erosion, in the midst of which the orifice of the canal of Sylvius appeared. It extended a little upon the medulla oblongata, making a slight alteration in the restiform, and in the olivary bodies. The fourth ventricle did not exist. There was no trace of a pons varolii, but without any appearance of want of substance. The anterior pyramidalia terminated in a fork by the cerebral peduncles.

Of the cerebral nerves, I could only find the origin of the first, second, third and fourth pair, which appeared in a healthy state, except the latter, which was, as I have said, detached with the small white mass, of which I have spoken. Not having raised the brain myself, it was impossible for me to find the origin of the other pairs. They all however, existed, and could be easily perceived through the openings of the dura mater. They have, moreover, been subsequently dissected by M. Magendie, and exhibited no peculiarity.

The cerebral substance was of the ordinary consistence, but the medulla oblongata appeared a little softened, especially about the erosion I have described, where there existed a kind of maceration. The occipital hollows were regularly formed, but appeared to me rather smaller than natural. The vertebral arteries existed. I cannot say how these were distributed, because they did not at first fix my attention.

Spine.—A considerable quantity of serum ran from the spinal canal. The spinal marrow offered nothing remarkable.

Chest.—Both lobes of the lungs crepitated, but their whole surface was covered with miliary tubercles, which were also found in the parenchyma. The cavity of each pleura contained two or three ounces of serosity. The pericardium and heart offered nothing in particular.

Abdomen.—The intestinal circumvolutions were of a deep red colour. The mucous membrane of the stomach exhibited a number of red dots on a slate coloured ground, and near the anterior part and great arch, there were five or six brown patches. In the middle of each of these, a small ulceration with elevated and perpendicular borders appeared. This membrane was otherwise of its ordinary consistence and thickness.

The mucous coat of the duodenum presented no ulceration. It was slightly red, and its follicles prominent. After this, throughout the whole tract of the small intestine, it was of a livid red colour, presenting numerous ulcerations, especially about the ileo-cæcal valve. The large intestines presented nothing in particular.

The mesenteric ganglions were larger than ordinary. The liver was of an extraordinary size, and of a pale colour.

The Organs of Generation.—The finger could readily be introduced into the vagina. The hymen did not exist. The labia were of a lively red colour, and bore the appearance of having been frequently irritated. The ovaries and uterus existed, but they appeared smaller than usual with girls of the same age.

The kidneys, spleen, &c. were in a natural state.

Conclusions.—This singular case is calculated to excite the particular attention of physicians of the physiological school, and presents no less interest for pathologists. I regret exceedingly, my inability to say any thing relative to the moral condition of this child previous to its entrance into the hospital, and am still in the expectation of receiving further information. Should any particulars be offered, I shall immediately communicate them.—*Bull. de la Soc. Anat.—Rev. Médicale, April, 1831.*

9. *Extraordinary Case of Discharge of Oil from the Bowels, and Sugar from the Urinary Passages.*—A curious instance of this was related by Dr. ELLIOTSON

in a late clinical lecture. It occurred in a man who, for three years, has discharged oil in large quantities from his intestines. The man is also labouring under diabetes, discharging sugar from the urethra, while from his rectum he daily pours forth an abundance of oil. The case must be very interesting to chemists, on account of such a double manufacture going on. Four of the first chemists in England have had specimens, which they have examined, and they found the discharge to be genuine oil. After a motion it flows from him liquid, and then it concretes. It swims in yellow flakes over the contents of the vessel, of the colour of unblanched bees' wax. A case of this kind is mentioned by Mr. Howship in one of his works; he says the lady took a pint of oil, and it immediately stopped the manufacture. I gave this man six ounces of sweet oil, said Dr. E. "not knowing what to do with the case, and trusting to the one recorded by Mr. Howship. He took three ounces, and was sick, he then took the other three, and they stayed down; and he has made very little oil since. He has phthisis into the bargain, so that he is producing three foreign substances—oil, sugar, and pus. Of course he must die. He has been inhaling chlorine with very great advantage: it has diminished the expectoration, and also the cough exceedingly, so that he has hardly any thing to complain of. He is sinking under the disease of his lungs, kidney, and intestines, but he will hardly allow that he now suffers at all. I may mention that I tried iodine for his phthisis, but it distressed him very much even in the most minute quantity; the chlorine, however, he bears perfectly well."—*London Medical Gazette*, June, 1831.

10. *Influence of the Genital Organs on the Cerebellum.*—Baron LARREY, in his *Clinique Chirurgicale*, states, that "The genital organs seem to have a marked influence upon the cerebellum, for when they are removed by disease, or any other means, the occipital region of the cranium and cerebellum gradually experiences such a sensible reduction, that the occipital bumps, which had been more or less protuberant before, disappear, and the whole occipital region of the head is diminished in proportion. We have verified this change of dimension in a great number of soldiers, who had been operated upon for sarcocele, and when one testicle only was removed there was only a reduction of that portion of the cerebellum and occipital bump, which belongs to the same side, with the extirpated testicle."

A soldier, who had been wounded in the occipital region by a splinter of wood, was attacked with all the symptoms of inflamed cerebellum, and, in despite of every thing which was done, they were only dissipated by the appearance of an abscess in the nape, which opened spontaneously. In about three months after the accident he rejoined his regiment, and many years elapsed before he again came under Larrey's notice. He was then so extremely altered in appearance, that the author mistook him for a young conscript, who had been exhausted by some asthenic disease. He was 32 years of age, of middle size, but thin and pale, his eyes were depressed, his lips blanched, his hair, more especially that which covered his occiput, was thin and bristled, and a feeling of pain and coldness was always experienced in the back part of his head. He was beardless, his voice was feminine, and as some of the assistants were not without suspicion of his sex, a more minute examination was considered necessary.

"To our great surprise, (says Larrey,) we found his genital organs reduced to the size of those of an infant some months old. His penis was not more than five or six lines long, and two or three lines thick, it never exhibited any degree of erection, and his testicles were so wasted as scarcely to equal in size a small bean."

A Swiss soldier of the guards, named Granfort, fifty years of age, was received into hospital for an erysipelatous affection of the left side of the face, attended with habitual pain and weight of head, deafness of the left ear, and a great difficulty of speech. The pulse was febrile, and the strength was much

reduced. These symptoms were occasioned by a fall, which this man had sustained a few days before the appearance of the erysipelas. Emollients were externally applied; diluents and anodynes were internally administered. After some days fluctuation was felt, and a deep incision discovered a large abscess in the neighbourhood of the left mastoid process, which was denuded and carious in one point, where a communication had been formed between the internal ear, which was the seat of the abscess, and the external surface upon which it pointed. Five or six weeks afterwards the walls of this abscess were clean and began to heal; still, however, pains in the occiput, a sense of weight in the head, and considerable difficulty in keeping the head from falling towards the affected side, were complained of. He seldom spoke, and when he did he articulated badly. The integuments covering the occiput were very sensible, the arm and hand of the left side were threatened with palsy, but his mind was completely undisturbed. After two months convalescence this soldier fell into a state of lethargy, and died twenty-four hours afterwards. On inspection the dura mater appeared of a deep brown, the arachnoid was opaque and in some parts of a dull white, these membranes and the cerebral mass were filled with turgid blood-vessels, the consistence of the brain was firmer than natural, the lateral ventricles contained some colourless fluid, three spoonfuls of pus were found in the cerebellum, the right lobe was diminished, and the medullary substance forming the arbor vitæ was dense and of a gray colour. The purulent matter was effused underneath the pons varolii and into the lambdoidal fossa, where the carious opening lay which communicated with the internal ear, and around which the membranes had contracted adhesions. "The scrotum and penis were so reduced from their primitive volume, that one might consider them as being in the second stage of atrophy."

"John Baptist Dandé, aged 26, of a scrofulous habit, who had been formerly under treatment for diseased spine, was attacked with pains in the left testicle, which swelled, and obliged him to apply for relief. It was at first regarded as a consequence of suppressed gonorrhœa, although the soldier denied that he ever had any syphilitic symptoms, and he was treated in accordance with this view. The tumefaction of the testicle increased however, and extirpation of this organ was at length determined on. After two months the cure was supposed to be complete, and Dandé rejoined his regiment; but in about six months afterwards the other testicle became attacked with symptoms of a similar character to those which had been experienced formerly, and every effort to resolve the swelling and to save the organ being made in vain, the appearance of symptomatic fever and other malignant tokens of inveterate disease suggested the necessity of a second operation. No disagreeable symptoms followed—

"But, one remarkable thing is, that the nape now appears sensibly depressed, that the occipital bump, corresponding with the testicle first amputated, is much smaller than the right. The body is likewise emaciated, the beard and mustaches are nearly fallen off, and, in fine, it is obvious that the total loss of the genital organs has had a very marked effect upon the cerebellum, since the occipital region offers a profound and abnormal depression—the consequence of atrophy, which also affected all the bones of the skull, the skin covering the face, and the beard."—*Medico-Chirurgical Review*, July, 1831.

11. *Atrophy of one-half of the Encephalon*.—In our seventh volume, p. 224, we noticed an instance of this reported to the Anatomical Society of Paris, by M. BODER; we learn from the *Rev. Médicale* for June, 1831, that an entirely similar case has been since communicated to the same Society, by M. Bell.

12. *Function of the Optic and Olfactory Nerves*.—M. VIDAL has communicated to the Anatomical Society of Paris, a case of fungous tumour of the dura mater at the base of the cranium. The optic and olfactory nerves were compressed and destroyed by the tumour, whilst the fifth pair remained perfectly unaffected.

Vision and the sense of smell were destroyed. This fact confirms certain experiments of M. Majendie, from which it results that if the trifacial nerve is necessary to vision, at least it cannot be considered as the exclusive organ of this function. It also tends to prove, in opposition to the opinion of the celebrated physiologist just alluded to, that the olfactory nerve enjoys the same prerogatives as the optic, in relation to the sense to which it transmits impressions.—*Compte rendu des travaux de la Soc. Anat.—Rev. Méd. June, 1831.*

13. *Extra-Uterine Foetation.*—Professor CHAUSSIER is of opinion that the development of the uterus, and the secretion of the membrana decidua are phenomena inseparable from extra-uterine pregnancy. Various observations have shown that this opinion is too exclusive, and the point may be now considered as settled, M. Gaussail having recently met with the uterus in its ordinary condition in a female gone her full term, with an extra-uterine foetus.—*Ibid.*

14. *Pulsation in the whole Vascular System.*—Dr. DAVID BADHAM of Glasgow, has communicated to the editor of the *London Medical Gazette*, the case of a man affected with paralysis of the right side, in whom the following very interesting peculiarities of vascular action presented themselves.

“1st. The whole *venous system* of vessels was observed to pulsate. On looking attentively at any of the superficial veins on the hand, arm, or elsewhere, it was quite evident that they moved, and in that wavy manner which has several times been noticed in the jugulars, but very rarely, I believe, over the system generally. The jugulars themselves were seen to dilate and contract alternately, much in the same way that a leech is observed to do when sucking.

“As to the arteries: 1st, the minutest twigs of this system of vessels are observed to pulsate. I cannot give a better idea of the extent to which this phenomenon has proceeded than by mentioning, that the small branches of the coronary artery of the mouth may be seen and felt to pulsate over the nose and up to the inner canthus of the eye; that in consequence of this inordinate action in vessels of so small a calibre the surface of the whole skin seems alive; that so enormous (for that is the word) is the impulse of the carotids and subclavians, on the paralysed side particularly, that at each pulsation the patient seems to receive a shock as if he were slightly electrified. 2. The arterial action of the paralysed side is nearly twice as strong as that of the other, affording a striking evidence of the independent action of the arteries. 3. The *thrilling purr* is most distinctly felt over the subclavians and carotids of both sides, but best on the side where the arterial action is least: on grasping the wrists of the patient within my hand, I also seem to recognise it in the pulse. This purr, according to Laennec, never occurs alone, but is always accompanied by the “*bellows blast*,” accordingly, 4thly, over whatever artery the cylinder is placed, a *bruit de soufflet* is heard: this, in the larger vessels, was always more perfect on that side where the arterial action was least, but it was easily produced in full perfection on the other by simply compressing the artery from above, and so diminishing its action; so that we may infer from this, that too much action in the arteries is destructive of this phenomenon. The *bruit de soufflet* is loud over the radial, ulnar, and other less considerable arterics; it is also attended with a sort of chirping, particularly at the right side. It extends likewise to the heart. The action of this organ is moderate and normal. A well-marked *bruit de râpe*, synchronous with the pulse, is heard over the third rib of the right side, near its junction with the sternum. As there is no deficiency in the natural impulse of the right ventricle of the heart, so there is no evidence of there being dilatation of this side; and we have here the remarkable phenomenon of *pulsation of the jugulars, without* this organic lesion of the heart, with which all writers on this subject have held it to be inseparable.”

A case, the reverse of this, in which there was dilatation of the right auricle, without jugular pulsation, will be found in our department of Pathology, p. 203, No. 18.

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15. *Remarkable Instance of Hæmorrhagic Tendency in a Family.*—Dr. RIECKEN, a German physician, in a recent work, has given an account of a very remarkable hereditary transmission of the *hæmorrhæal diathesis* through several individuals in a family. The father of this family, Ernest P. was a husbandman and joiner, who had always enjoyed good health, and at the time of the publication of Dr. Riecken's work, in 1829, was in his eighty-sixth year. His second wife, by whom he had the children to be mentioned presently, was of delicate health. In her thirtieth year she was attacked with rheumatic gout, and, after this ceased, with curvature of the spine, asthmatic complaints, and frequent pain under the breast bone. Bye-and-bye signs of water in the chest came on, general dropsy followed, and she died of that disease in her sixty-sixth year. Neither the wife nor the husband was ever subject to hæmorrhage, or to petechial spots. This couple had twelve children, five sons and seven daughters, of whom four died of small-pox, one of eclampsia, and three boys and one girl of hæmorrhagy.

William Louis, one of the three boys, enjoyed good health till his fourth year, when he was attacked with bleeding from the left nostril, which continued, with occasional intermissions, for eight days, and was only arrested by stopping up both nostrils firmly with the *Boletus igniarius*, (ziindschwamm.) Two days afterwards, he was seized with anxiety and a sense of constriction in the præcordia, attended by swelling and tenderness there, then with cold sweating and deadly paleness, and at length with vomiting of black fluid blood, which repeatedly returned, and proved fatal in the course of a week.—In another of the boys, John Christian William, blue spots, unattended with pain, frequently broke out on the skin between his first and eleventh years, but were not accompanied by hæmorrhage. In his tenth year he was attacked with violent rending pain in the extremities, more especially in the limbs, which abated in a month and a half, after a hard tumour formed on the left knee. This tumour had been present for a year and a half, when he was suddenly seized with violent tooth-ache in the foremost grinder of the left side of the lower jaw, and the pain was so excruciating that he consented to the extraction of the tooth. The tooth was quite healthy. A gush of fluid blood immediately took place from the cavity, and nothing could check it. The poor boy gradually became blanched like wax, and expired on the eighth day.—Philip Henry, the third boy, presented the appearance of blue spots on the skin, particularly of the buttocks, even during the first year of his life, yet without any signs of weakness. When a year and a quarter old, he died while vomiting fluid blood which had begun the day before, without any previous appearance of ill health. The daughter died four days after birth in consequence of hæmorrhage after the division of the frænum of the tongue.

The same striking constitutional infirmity likewise appeared among the grandchildren of Ernest P. born of his youngest daughter, Louisa Catherine. This woman, who is still alive, and in the thirty-second year of her age, is short in stature, and light haired, has gray eyes, and a delicate, fair complexion. She never had purple spots, or exhibited any tendency to hæmorrhage; nay wounds, and even apertures in veins made by the operation of blood-letting, healed in the usual manner. The menses commenced in her thirteenth year, and were usually rather abundant, and of eight days' continuance. She suffered much from tooth-ache and neuralgic affections of the extremities, was indeed seldom altogether free of wandering pains, and in her pregnancies was so much affected by a tendency to plethora that it was frequently necessary to withdraw blood. The blood coagulated more slowly than usual, was very dark, contained much serum, and presented a thin buffy coat. The hæmorrhage immediately after delivery, as well as the lochial discharge, was always profuse. Her husband is a stout, healthy man. They have had six children, four boys and two

girls, of whom only the eldest girl and youngest boy are now alive. The remaining girl died of convulsions when nine months old, and the three boys of hæmorrhage. The surviving girl is very healthy, and never had either blue spots or bleedings.

The four boys were all born easily, and the navel healed up without hæmorrhage. They all had a disproportionately large head, with unusually loose sutures, and fontanelles of uncommon size and slowly filled up. Their bodies were delicately and regularly formed, the nails were of the natural appearance, the skin fair and delicate, with the veins shining distinctly through, and the countenance pale, sickly, and bloated. They had all blue eyes, and one of them fair, but the three others black hair. Dentition went on in all in the usual manner. They were very lively, of mild dispositions, and the eldest showed much cleverness. The operation of vaccination, which was performed by incisions, was not followed by any untoward effects. All had from birth a very fetid discharge of a white, flaky, puriform mucus from each ear.

The eldest of these boys manifested a distinct tendency to hæmorrhage in the seventh month: dark, irregular spots appeared on various parts of the skin, varying in size from that of an *achtgroschen* piece to that of half a man's hand, and without any external injury; and these were at first pale red, but as they increased in size rapidly became bloish-black, and then reddish-blue, bluish-green, and dirty-yellow as they were disappearing. At times the body was entirely covered with them. They were attended with hardness and swelling, but not with pain. The first attack of hæmorrhage occurred in his first year in consequence of his having bitten the tip of his tongue, and it was not arrested till various artificial means had been tried in vain, and nature accomplished it after the child was reduced to the lowest possible state of exhaustion. When he was eighteen months old a second attack took place in the form of epistaxis, which was not checked till he was almost at the point of death; when it ceased under the use of the acid elixir of Haller and laudanum, and during the deep sleep which supervened. On his awaking, general convulsions attacked him; then deep sleep returned, and after this he awoke refreshed, and soon recovered. From this period till he was four years and a half old, he had regularly every three months an attack of epistaxis from the left nostril, which continued between four and ten days with occasional intermissions, and was preceded by lancinating head-ache, sounding in the ears, excitement of the pulse, flushing of the face, and lividity of the lobes of the ears. The blood was dark red, thin, without tendency to coagulation, and towards the close of the paroxysm pale dirty-red in colour. The hæmorrhage never ceased till the child, after repeated fainting fits, was brought almost to the point of death. In his fourth year he complained much of shifting pains, particularly in the left thigh, which were particularly troublesome before the customary bleedings or on any change of weather, but became much less so on a swelling of the knee-joint making its appearance. The swelling confined him for some time to bed; but it was diminished by proper remedies; upon which a fresh attack of hæmorrhage occurred; and after this the pains ceased. The child, however, was pale and exhausted, and in two days he died with all the symptoms of inflammation of the bowels. Sulphate of soda had no effect in checking the hæmorrhagies in this case.

In the second boy, the blue spots began to appear fourteen weeks after birth. When ten months old, a furuncle formed in the right arm-pit, which was carefully opened. At first pus alone issued; but afterwards violent hæmorrhage ensued, which continued for three days, notwithstanding the constant use of tents and compresses dipped in alum. After the lapse of nearly three-quarters of a year, an almost fatal hæmorrhage followed a trifling injury of the frænum of the lower lip; and this was not checked till on the third day the actual cautery was resorted to. After this, with the exception of the blue spots, the child was healthy, and became plump and strong. But when two years and a half old, plethoric symptoms began to show themselves as in his older brother's

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case; and he was attacked with pleuro-peripneumony. Dr. Riecken avoided all evacuations of blood, and brought him through his illness by other antiphlogistic remedies. Suddenly, however, after a return of fever, copious bleeding took place from both nostrils, for which all the usual means, including Glauber's salt, were in vain put in requisition; and it was not till the child had repeatedly fainted, and was as pale as a corpse, and till the blood had in the end flowed for six hours as pale as bloody serum, that the hæmorrhage ceased spontaneously. Half a year afterwards he was attacked by flying pains in the extremities, followed by swelling in the left ankle, and, when this disappeared, by swelling in the left knee. Recovery, however, was gradually so far accomplished, that the child could walk again, when, in an accidental fall, a small wound not larger than a pin's head was inflicted on the point of the tongue. Profuse hæmorrhage commenced, and for five days it continued, although every conceivable remedy was tried, including three applications of the cauterizing iron, till at length the breathing and pulse ceased, the skin became icy cold, the eyes lost their lustre, and death was believed to be at hand. After a time signs of animation appeared; the hæmorrhage was found to have ceased, and the child became convalescent. In fourteen days he began to complain of occasional stitches under the ribs of the left side, accompanied with dry cough; and during a fit of coughing, blood began to gush from both nostrils. The blood was fluid, thin, brownish in colour and fetid. It continued to flow in spite of every remedy which could be thought of, and the little patient soon died slightly convulsed.

The third boy, in consequence of the frænum of the tongue being unskillfully divided, was attacked when three months old with profuse hæmorrhage, which lasted for three days, and only yielded after repeated applications of the actual cautery. The blue spots did not begin to show themselves till the sixth month. The plethoric symptoms observed in the two former cases appeared also in the present instance about the thirteenth month, and especially some weeks before his death, which took place after an attack of hæmorrhage of two days' continuance, occasioned by an injury of the tip of the tongue with an incisor tooth. On this last occasion repeated cauterization was of no use.

In the youngest boy, who is still alive, a chronic, itchy eruption of the face was added to the discharge from the ear, which he had in common with his brothers. Blue spots began to appear on the skin four months after birth. But subsequently to the administration of ass-colt liver-oil (!) to the mother, both the eruption and the livid spots disappeared. Whenever the mother intermitted the oil the spots reappeared; and whenever she resumed it, the discharge from the child's ear dried up, the spots ceased to form; nay, on one occasion he sustained a wound of the ring finger with a sharp knife, yet the hæmorrhage was not greater than in other children. Subsequently a furuncle on the shoulder was opened, and a second time a wound accidentally inflicted without any particular hæmorrhage. The further history of this case is not given.

Besides the mother of this family, Ernest P. had two other daughters, who, together with their families, never suffered from hæmorrhage or ecchymosis; but they were very liable to gout, rheumatism, chronic abscesses, and eruptions. Among his ancestors and collaterals there was no one ever liable to hæmorrhage; nor can the least relationship be traced between his family and any of the previously ascertained instances of families possessing this constitutional infirmity.

The author in his general remarks seems disposed to ascribe the constitutional hæmorrhagic diathesis to a gouty taint; but this is surely an erroneous idea, otherwise it ought to be much more frequently met with. In the present, as in every previously recorded instance, it is very remarkable that the infirmity was confined to the male branches of the family, and that, nevertheless, it was transmitted through the female branch to the males of the next generation.—*Ed. Med. and Surg. Journ.* July, 1831, from *Medizinisch-Chirurgische Zeitung*, Nov. 15, 1830.

16. *Case of General Emphysema produced by Combustible Gas.*—The following case was presented to the Royal Academy of Medicine by M. BALLY. A man, twenty-five years of age, was admitted in the Hôpital Cochin on the fifteenth day of typhoid fever. He complained of violent pain in the left thigh, which, as well as the scrotum, was swelled; and in his delirium he talked of having been bitten in the knee by a dog; but no information to this effect could be procured after a diligent inquiry. He died on the day after admission; and in eight hours the body was examined.

Blood had issued from the nose, and from the surface of the skin of the thighs and head, where the cuticle had been stripped. The whole body was emphysematous, but especially the left leg. This was twice its natural size, had a brownish-violet colour, and was extensively covered with black and white phlyctenæ; and a reddish serosity, mixed with air-bubbles, issued from the black ones. This limb resounded when struck, and crepitated when handled. The belly was much distended with gases. The face and temples were livid; and when the skin there was divided a great deal of reddish-black blood issued. The brain and lungs did not present any unnatural appearance; the heart was pale and empty; the intestines presented the usual organic derangements observed in typhus, (enlargement, induration, and ulceration of the glands of Peyer and Brunner.) Bubbles of air filled the vessels of the pia mater and left saphena vein. The lymphatic glands of the mesentery were enlarged, and contained a gas which took fire at a candle and exploded. The same phenomenon was witnessed after scarifications of the legs, thighs, and scrotum. A puncture having been made in the belly, the gas which issued took fire also, and formed a flame blue at the base, white at the apex, and which burned for some time. The combustion likewise extended to the edge of the opening made with the trochar; and the edges became black and were consumed, so that the aperture was rendered of twice its previous diameter. The gas contained in the subcutaneous cellular tissue was inflammable like that in other parts.

M. Bally considers that this evolution of inflammable gas was not a phenomenon which occurred after death only and puts the question, whether the case throws any light on the spontaneous combustion of the human body?—*Archives Générales*, Jan. 1831.

17. *On the Respective Prevalence of Pneumonia at different Ages, and in the Two Sides of the Chest.*—M. LOMBARD has given an account in the *Archives Générales*, for January last, of some very interesting investigations made by him into the respective prevalence of pneumonia in the two sides of the chest, and his results show that in France the right lung is more frequently affected than the left. We take the following analysis of his labours from the Edinburgh Medical and Surgical Journal.

Uniting all the cases collected by Chomel, Andral, and himself, he finds, that in 968 patients 195 had the disease in both lungs, 260 in the left lung, and 413 in the right; so that for 455 attacks of inflammation of the left side there are 673 of inflammation in the right. Various explanations have been proposed of this fact. Some have ascribed its occurrence, more especially in young children, to the right being the side on which most individuals lie in bed; though how this circumstance should have the effect of predisposing to pneumonia we confess it is not easy to perceive. Others have ascribed it to the greater muscularity of the right side of the body; but this explanation is evidently inadequate, since M. Lombard clearly establishes that the difference between the two sides in liability to inflammation is at least as great in females as in males, and in young children as in adults. M. Lombard, on the other hand, considers that the explanation ought rather to be sought for in the anatomical structure of the organs; and he thinks that the difference in the size of the arteries sent to each side will account for the fact. "After the pulmonary artery," says he "has crossed the direction of the aorta, and has reached the level of the second dorsal vertebra, it divides into two branches, of which the right branch is the

larger and more directly transverse in its course, so that more blood must pass along it than along the left division in the same interval of time. The functional activity of the right lung is therefore greater than of the left lung; and it is well known that the frequency of inflammation is in the direct ratio of the functional activity of the organ. Such at least is the only plausible hypothesis which can be formed in the present state of science."

Several late authors have thought that pneumonia is more frequent in adults than in the young. But M. Lombard has been led to a different conclusion; which is, that it is most frequent in infancy, and in old age, and least frequent in the prime of life. The data on which he rests this statement are taken from various public hospitals. From the pathological examination of 206 infants between one day and eighteen months old, of 118 children between eighteen months and fourteen years, and of 1284 persons of different ages between fifteen and eighty-three, he infers, that pneumonia forms 3-17ths of all the organic derangements found in infants, who have died during the first eight days—that in the second week it forms 2-9ths—in the third week 3-10ths—between the sixth week and the end of the second month 2-9ths—between the second and sixth month 1-10th only. In the second year it increases again to 1-3d; from the second to the sixth year it forms between a fourth and a fifth; from the eighth to the eleventh between a fourth and a sixth; from the fourteenth to the nineteenth only 1-37th; from the nineteenth to the twenty-seventh about a ninth. From this period till the age of forty-seven the proportion is only a fifteenth; from this till the age of seventy-five a fourteenth, and above this an eighth.

18. *Aneurism of the Right Auricle without Jugular Pulsation.*—It is believed by some pathologists, that pulsation of the jugular veins is always present in cases of aneurism of the right auricle. Mr. BADHAM, however, of Glasgow, relates in the *London Medical Gazette*, for May last, an instance of hypertrophy, with dilatation of the right auricle, in which this symptom was not exhibited. The subject of this case was a man of seventy-five, of strong constitution, who died of dropsy. The right auricle was enlarged to twice its natural capacity and thickened, and the ventricle of the same side was moderately dilated; the left auricle was similarly affected with the right and to the same extent, but there was no valvular disease, or narrowing of any of the cardiac orifices, and the left ventricle was quite healthy. This case is further interesting, not only from dilatation of the auricles being a rare disease, but also as disproving the assertion of Laennec, that it is the consequence of disease of the corresponding ventricle, or of the valves.

19. *Case of Hydrothorax in a Child fifteen months old.*—M. LICHTENSTADT relates in a late No. of *Hecker's Annales*, the case of a child fifteen months of age, and well-formed, who, without any appreciable cause, was suddenly attacked with oppression of the chest and great anxiety; strong and irregular throbbing of the heart; inability to remain in a horizontal position. The little patient died in a few hours. Upon dissection, both sides of the chest were completely filled with a limpid fluid; there was also a similar effusion within the pericardium. Neither the pleura nor the pericardium presented any signs of inflammation. Nothing remarkable was observed in any other part of the body.

20. *Enormous dilatation of the biliary ducts.*—M. BERARD has met with a case in which the biliary ducts were enlarged from twelve to fifteen times their natural size in the parenchyma of the liver. The patient had neither icterus nor obliteration of the ductus choledocus, but the biliary ducts contained many calculi.—*Rev. Méd. May and June, 1831.*

21. *Rupture of the Liver and Heart from a fall.*—M. DEHANNE has communicated to the Anatomical Society of Paris, the case of a woman who died in

consequence of a fall from an elevated place. On examination the surface of the liver was found torn in many places, the tissue separating the two auricles of the heart, broken; and the left auricle torn to the extent of some lines.—*Rev. Méd. June, 1831.*

22. *Fatal Hæmatemesis.*—M. RICHARD has met with a case of hæmatemesis in a young man addicted, since infancy, to the use of spirituous liquor, which proved speedily fatal. On examination, an ulcer was found near the cardiac orifice of the stomach, at the base of which the coronary artery of that organ was observed, opened by erosion, and from which of course the blood had flowed.—*Ibid.*

23. *Diffused Gangrene of the Lungs.*—Of this disease, LAENNEC met with but two instances, and therefore supposed it to be of rarer occurrence than it would seem to be from the researches of subsequent pathologists. During the past year M. BERGEON communicated to the Anatomical Society of Paris, three cases of it. Five or six cases of circumscribed gangrene of the same organs, have also been related to that Society.

M. Cruveilhier considers as one of the pathognomonic signs of this disease, the expectoration of extremely fetid sputa, sometimes mixed with blood, supervening shortly after symptoms of acute pneumonia.—*Ibid.*

24. *Melanosis.*—M. CRUVEILHIER has, several times last winter, met with a peculiar species of this disease in the lungs. A specimen exhibited to the Anatomical Society of Paris, presented a filtration of a grayish-black colour, occupying a considerable extent of the lungs; in the infiltrated parts, the parenchyma of the organ was softened, pulraceous, reduced to a vascular net-work, and very readily tearable.—*Ibid.*

25. *On Obliteration of the Veins as the Cause of Œdema or Partial Dropsy, particularly in the Lower Extremities.*—Some very interesting observations on this subject, by M. CORBIN, Physician to La Charité, are inserted in the *Archives Générales*, for April last. Various authors have indicated obstruction of the veins as the cause of certain partial dropsies, but the experiments of MM. Rayer and Bichetcau, who tied the principal venous trunks without any effusion being produced, seemed to have raised some doubts whether obstruction of the veins did in general give rise to dropsy. M. Bouillaud, in two valuable memoirs in the *Archives* for 1823 and 1824, completely established the fact, that dropsy does sometimes depend upon this cause, and he adduces cases in which obstruction of the abdominal vena cava gave rise to œdema of both lower extremities; obstruction of one iliac or femoral vein, to infiltration of one limb; that of the vena porta, to ascites; of the superior cava or of the larger trunks which join it on the right or left side, to infiltration of the whole face and upper extremities, or to one-half of the face and one arm. In this theory, Mr. B. includes passive dropsies alone, and not phlegmasia dolens.

M. Corbin's object is to illustrate one point only of this question, viz. where one inferior extremity alone is infiltrated, or a great deal more infiltrated than the other. Mr. C. has collected twenty cases in illustration of this point, seven of which he relates, and he thinks that they establish the proposition, that when one limb is infiltrated to a certain degree, and for a length of time, there is always a material obstacle to the circulation of the blood through the veins in that limb. Passive infiltrations, it must be remembered, alone are here referred to, and not phlegmasia dolens, nor that infiltration which coëxists with certain erysipelatous inflammations, or that which follows these and other exanthematous diseases. Mr. C. states, that as far as his experience extends, it would not be justifiable to refer these last forms of œdema to obstruction of the veins, though future experience may show that they also are induced by the same cause.

Our readers know that M. Velpeau, Dr. Lee, and others, attribute phlegmasia dolens to obstructions in the iliac veins, and have adduced some facts in support of that opinion. We look upon this point, however, as yet unsettled.

The obstacle which impedes the circulation of the blood in the veins, may be of various kinds. Thus, a tumour situated in the course of the vessels, or the impregnated uterus, may produce the same effect as sanguineous concretions formed in the vessels, but most commonly it is these last that we find to be the cause of the obstruction.

26. *Remarkable Case of Dropsy.*—Mr. FOTHERGILL, of Selby, relates in the *North of England Medical and Surgical Journal*, for November, 1830, a case of dropsy occurring in a married lady, twenty-two years of age. This patient was attacked in 1813 with pain in the abdomen, and in the region of the kidneys, accompanied with that kind of constitutional irritation which usually attends diseases of the uterus. Her general health suffered, and the digestive organs were considerably disordered. The operation of paracentesis was had recourse to for the first time on the 11th of October, 1815, and between this and the 5th of December, 1828, it was performed one hundred and fifteen times, and upwards of seven hundred and ninety-four gallons of water drawn off. The patient died on the 11th of December, 1828. On examination, her uterus was found enormously enlarged, and full of hydatids.

27. *Case of Momentary Suspension of Muscular Contractility and Sensibility.—Disease of the Superior longitudinal Sinus.*—M. GINTAC, of Bordeaux, in an interesting volume of memoirs and cases recently published by him, relates a very curious case of a child four years of age, who was subject to attacks of momentary suspension of voluntary motion. These attacks came on suddenly, without premonition, sometimes occurring whilst the child was playing; at others when she was in bed. They were not preceded or accompanied with any spasms or frothing at the mouth. The child suddenly lost, in severe attacks, all power over the muscular actions, and if standing, fell down, or if lying, became incapable of motion. The sensibility was also diminished. The senses were slightly weakened, but was still sensible to external impressions. The eyes were open and immoveable; her hearing was preserved; she also retained in part her intellectual faculties. In slight attacks she would endeavour to perform muscular movements, generally in vain. Thus, when food was presented to her, she would endeavour to take it, and would fret and cry at not succeeding. The duration of the attack was variable; it rarely however continued longer than a quarter of an hour. The intervals between the attacks was also very variable. Sometimes she had several paroxysms in a day, at others there was an interval between them of two weeks.

This patient died in 1828 of measles, and on post mortem examination, the principal abnormal structure found, was in the superior longitudinal sinus, beneath the sagittal suture. Its parietes were thickened, dense, and yellow; they resisted and crepitated under the knife, they were distended by a sort of blackish coagulum, in the centre of which more fluid blood was found. Between the coagulum and the parietes of the sinus, there was a yellowish concretion, of a fibrous appearance, and of near a line in thickness. The internal membrane of the sinus was redder than common, and presented, in a very marked degree, the reticulated structure, which it commonly possesses; there was no other contraction in the remainder of this sinus. The other sinuses were slightly engorged; the cerebral vessels were somewhat engorged, especially in the upper and right portion of the brain, and in the vicinity of the diseased sinus.—*Archives Générales*, May, 1831.

28. *Pathology of Erysipelas.*—One of the late numbers of the *Journal Complémentaire*, contains some interesting remarks, by Dr. CORNIX, illustrative of the history of erysipelas. As we do not receive that Journal, we transfer to our

pages the following notice of Dr. Corbin's memoir, from the London Medical and Physical Journal.

"The principal objects Dr. Corbin has in view, are to offer a few comments upon certain forms of erysipelas which appear to deserve especial attention; to describe the state of the gastro-intestinal mucous membrane, in a certain number of persons who died of the disease; and also to adduce some examples in which erysipelas exerted a remarkable influence over other concomitant maladies.

"Phlegmonous erysipelas is frequently complicated with gangrene, but the latter condition arises in different ways. Mortification of the skin is generally consecutive to destruction of the subcutaneous cellular tissue: and in this case we can detect, before gangrene takes place, some signs of fluctuation, and, if the disease be abandoned to its course, ulceration occurs, and shreds of the cellular tissue, mingled with pus, are discharged; the external integuments are destroyed, and the muscles or aponeuroses are laid bare. In such instances, free incisions, if made at an early period of the disease, may prevent mortification, and, if at a later stage, they may limit its extension. The parts do not assume a black appearance, nor is there any gangrenous odour. In other, and less common cases, to which alone ought to be applied the term of gangrenous erysipelas, the gangrene commences in the skin, and is preceded by the appearance of phlyctenæ, or by the black and livid tint, and peculiar odour, of this class of disease. Here incisions have always appeared useless, and when they have been made, the edges of the wounds suffered more from gangrene than the other parts. Erysipelas of this last mentioned species is usually very severe: it is characterized from the commencement by prostration of strength, and is almost always quickly fatal. Such cases are, fortunately, rare. Thus, in erysipelas of the limbs, in nine cases out of ten, gangrene takes place after the suppuration and destruction of the cellular tissue. We frequently see pure phlegmonous erysipelas arise in the scrotum, and a part of it destroyed by mortification. Upon the face and hairy scalp, gangrenous erysipelas (confining the term to its proper limits,) is rarely seen; and when it does occur, the skin always mortifies after suppuration of the subcutaneous cellular tissue. This fact is illustrated by the following case, which is also interesting in some other respects.

"A man, forty-eight years of age, after having drank very hard, received a sabre wound, three inches long, upon the left parietal bone. He was admitted the next day, (March 3d,) into the Hôtel Dieu. Attempts had already been made to promote the immediate reünion of the divided parts, although, from the appearance of the wound, they were not likely to succeed. The adhesive plasters, which had been employed, were removed, and the lips of the wound were separated: the bone was not exposed, but at the anterior part of the wound, which approached the coronal suture, the fibres of the aponeurosis of the occipito-frontalis muscle were denuded. The edges of the wound were laid very gently together, and, as erysipelas was at that time very common, cold lotions were ordered, and twenty leeches were applied to the neck.

"On the 4th, the face was rather swollen.

"5th. Slight erysipelatous appearance on the right eye. Cold lotions continued; blister to the neck. The erysipelas continued to extend, but before it had reached its highest degree of severity, it disappeared entirely.

"On the 9th, there was seen at the bottom of the wound a yellow-looking substance, which was found to be the aponeurosis already mortified. The patient complained of being dull and heavy, and of a sensation of weight in the head, which was so painful that he could scarcely bear to rest upon his pillow.

"11th. Manifest fluctuation at the back part of the scalp, and extensive separation of the scalp from the bones. The abscess was opened, and a small quantity of pus was discharged. Much relief followed, and the following days no remarkable symptoms occurred. Mortification of the aponeurosis still continued, and shreds of yellowish-looking fibres were, from time to time, separated

from it. The patient still continued drowsy, but could obtain no sound sleep. Inflammation of the membranes of the brain, with violent fever, convulsions, and great prostration of strength, soon came on, and the patient sank, and died in a few days.

"Upon dissection, the lungs were found engorged with blood, and appearances of chronic gastro-enteritic inflammation were detected. Upon the outside and upper part of the cranium, the cellular tissue between the bones and the aponeurosis was entirely destroyed. The surface of the bones was covered with a sanious discharge, and exfoliation of them had commenced. The pia mater was inflamed and thickened, and between this membrane and the arachnoid there was an effusion of pus.

"This case is remarkable, not only on account of the progress of the erysipelatous inflammation, but it shews also that a wound on the head may remain open, although the bones are not denuded. If the occipito-frontal aponeurosis is exposed, it exfoliates like a tendon, and often in a very gradual manner.

"Cases of erysipelas are occasionally seen, which appear to be intermediate between the superficial and phlegmonous forms of the disease. In such instances, there is but little swelling, no collection of matter, to any great extent, under the skin, but here and there small insulated abscesses. In a patient named Mainvielle, after an attack of erysipelas of the face and scalp, several small abscesses formed in the neck, behind the ears, and upon the cranium. In another patient, after a similar attack, accompanied with enormous swelling of the face and scalp, an abscess formed upon the right upper eyelid, and numerous small collections of matter, from the size of a filbert to that of a cherry-stone, also formed upon the scalp. These abscesses remained for a long time very hard; some of them disappeared spontaneously, and others were opened, and healthy pus was discharged from them.

"External erysipelas frequently disappears from one part, while at the same time the disease attacks a more or less distant region of the body. Thus, in a man named Tessier, who was admitted into the Hôtel Dieu, erysipelas of the leg and foot disappeared when the face became the seat of the disease, and the parts originally affected were again attacked when the face recovered. Erysipelas also frequently exercises a revulsive influence upon internal diseases. A young man was attacked with acute pulmonary catarrh: he was bled frequently, but without decided advantage; he was much oppressed, skin hot, pulse hard and quick. He was attacked with erysipelas of the nose, which quickly extended to the face and scalp. The feverish symptoms increased, and he became delirious. Leeches were applied to the neck, and he was bled in the foot; in a few days the erysipelas disappeared. From the time that the external inflammation appeared, and while it lasted, the patient breathed freely; there was less expectoration, and, in fact, there was every reason to believe that the bronchitic affection had ceased. It might at first have been presumed that this diminution of the symptoms depended as much upon the repeated abstraction of blood, as upon any revulsive influence of the external inflammation: but no sooner had the erysipelas ceased, than the cough, oppressed breathing, and other indications of bronchitis, reappeared with increased severity, and it was again necessary to have recourse to venesection.

Phlegmonous erysipelas of the lower extremities, of the most severe kinds, is very often produced by the slightest external causes: either from excoriations, slight wounds, the neglect of old ulcers, or by applying stimulating remedies to them; and sometimes simple contusions are sufficient to produce the disease, as in a man named Wivet, among other similar instances, who died in three days of erysipelas, in consequence of falling upon his knee. Sometimes no external cause can be detected.

When we oppose to these cases numerous instances of other patients, placed in the same circumstances, or even affected, during the same season, with much more severe external lesions, and in whom, notwithstanding, no erysipelatous disease is developed, we must presume that, in the former, there existed some

peculiar disposition, or, to speak less vaguely, a lesion of some important organ, and particularly of the abdominal viscera. The idea is confirmed when we detect a red and dry tongue, head-ache, sensibility in the epigastrium, an inflated state of the belly, diarrhœa, or enlargement of the liver: but the results of dissection in eleven fatal cases of erysipelas, afford the most satisfactory proof of the accuracy of this opinion.

"In the first, a patient named Tupin, the mucous membrane of the stomach was nearly of a black colour, and softened throughout the region of the pylorus: the commencement of the duodenum exhibited the same appearances. Almost the whole of the small intestines, to within an inch above the cœcum, was of a deep violet colour. In the large intestines, some of the glands were hypertrophied, and appeared like small pustules.

"In the second case, a patient named Pflüg, stomach highly coloured in different parts, with patches of a red and brown appearance; the colon, throughout its whole extent, of a deep red colour.

"CASE III. Durantou: Appearances of chronic inflammation of the stomach and duodenum, characterized by reddish tubercles; rectum distended with feces.

"CASE IV. Leerbier: Peritoneum of a red colour, with serum. Stomach, patches of brown and black colour. Duodenum, a circular ulceration, about the size of half a crown.

"CASE V. Scheier: Mucous membrane of the stomach softened, and of a dark slate colour; the submucous cellular tissue of the duodenum deeply injected; red patches in the cœcum.

"CASE VI. Wivet: The mucous membrane of the stomach and duodenum softened, and of a gray colour, throughout nearly its whole extent.

"CASE VII. Debry: In the stomach, near the cardiac orifice, was found a smooth hollow tumour, the size of a small renette apple, containing bloody serum. The whole surface of the stomach of a dark colour.

"CASE VIII. Tronnet: The mucous membrane of the stomach softened, and generally pale; small red spots on the great curvature.

"CASE IX. Lefebvre: Liver studded with gray tubercles; spleen softened, and of a large size.

"CASE X. Lambert: The mucous membrane of the stomach of a deep slate colour.

"CASE XI. Delgutte: Biliary calculi were found.

"Thus, with the exception of the last two cases, in which no striking morbid appearances were detected, in all the bodies there were considerable lesions of the abdominal organs. If we compare these results with our observations during life, it will be difficult to deny that most cases of erysipelas depend upon some internal cause. If such be the most frequent cause of erysipelatous diseases, it may appear singular to attribute to these maladies a decided influence over the progress of internal inflammations. This influence is, however, very evident, and not more astonishing than other revulsions effected by nature or art. No fact is better ascertained than this kind of antagonism, which is established, in certain cases, between the skin and internal mucous membranes, and especially the gastro-intestinal. Hence the use of purgatives and emetics in the treatment of erysipelas: but these means should only be employed when the digestive powers are healthy, or at least when there is simple obstruction of the stomach and bowels. In similar instances to those above-described, we must, it is true, act principally upon the abdominal organs, but antiphlogistic and emollient remedies can alone be employed with safety."

29. *Amnesia*.—M. Cassan has communicated to the Royal Academy of Medicine of Paris, the following interesting case of cerebral disease with the loss of memory of words. A man was attacked with hemiplegia, which was relieved by bleeding and blistering. Shortly afterwards he experienced incipient anau-

rosis in both eyes with pain in the head and noise in his ears. After some time hemiplegia returned. The patient then lost the memory of words, so that he could not name the commonest things; his mind in other respects was unimpaired, and all the organic functions were properly performed. He could also *read fluently*. He remembered objects, for he drew them upon paper, but he forgot the names by which they were called. The sight of a female whom he loved excited him and momentarily restored the faculty of language he had lost. He complained of insomnia, heaviness of the head, difficulty of muscular action, weakness of sight and hearing, &c.

This case is analogous to that of the notary, recorded by M. Pinel in his nosography, who, after an attack of apoplexy, forgot his own name, that of his wife, and of his children, but remembered the places where his clients' briefs were deposited. M. Larrey has also related an instance of the loss of memory of words, following a wound. Professor Broussonet has also recorded an instance in which there was a loss of memory of substantives, while that of adjectives was preserved; it followed apoplexy; and a similar case is recorded by Dr. Camberet in the *Journal Complémentaire*, for February, 1819. Three analogous cases will also be found in this Journal; one by Dr. Jackson, Vol. III. p. 272, another by Dr. Chailly, p. 452 of the same volume, and a third by Professor Dickson, Vol. VII. p. 359. This last has the closest resemblance to the case of M. Cassan.

30. *Spinal Irritation*.—The subject of spinal irritation has of late attracted considerable attention. The following cases related by Mr. WARK, of Dunlop, in the *Glasgow Medical Journal* for May last, tend to throw additional light on this very interesting affection.

Case 1. 3d April, 1826. J. H. Weaver, æt. 49, of shattered constitution. Complains of dull pain at breast, with incessant cough, almost preventing sleep, copious muco-purulent expectoration, dyspnoea, palpitation of heart, head-ache, and profuse nocturnal sweats; pulse 95, bowels confined. Has been ill four months, and treated with blisters to the breast, and cough mixtures, without benefit. Dorsal vertebrae, about 6th, 7th, and 8th, are painful on pressure; pain stretching forward to breast, so acutely as to cause him to cry out. He had his bowels freely opened with purgative medicine, was confined to the horizontal position, and a blister was applied over pained part. 8th April. Blister after several applications discharges freely, but has produced a good deal of febrile excitement, which is subsiding. 12th. Blistered surfaces healed, and all the symptoms mitigated; pain in spine confined to one spot. The blister repeated, and kept open about eight days, restored him to his usual good health. This patient had been given up for consumption, and certainly he bore some marks of phthisis. It appeared, however, to be merely chronic bronchitis, combined with spinal irritation.

Case 2. 22d June, 1828. H. B. æt. 21, a woman of stout habit, has been subject to cough for several years; for eight or nine months has complained of pain in right side of chest, nearly constant, increased on inspiration and coughing; weight and oppression at breast, difficulty of breathing, dry convulsive cough, occasional head-ache, and dullness of spirits. Pulse 90, full, tongue moist, bowels natural, catamenia regular. Was bled to 12 ounces, and had a small blister applied to the breast with very little relief. 3d July. Symptoms worse. The 3d, 4th, and 5th dorsal vertebrae are tender on pressure, particularly on right side, pain stretching acutely forward along the course of the intercostal nerves, to pained part inside of chest, causing dreadful convulsive coughing. The horizontal position was strictly enjoined, and 12 leeches ordered to pained part of spine, which gave immediate relief; this was followed by a small blister kept open for a few days. 10th July. Expresses herself greatly relieved, cough and other symptoms nearly gone—three leeches more completed the cure. About a year and a half afterwards, this girl being attacked with small-pox, the same symptoms recurred, but subsided with the fever.

Case 3. 5th June, 1829. Mrs. A. æt. 33, mother of six children, of delicate constitution, complains of intense pain of right side of head, which appears a little swollen, dry cough, pain and oppression at breast, little increased on deep inspiration; respiration hurried and laborious, pain and numbness about shoulders, stretching down arms, palpitation of heart, great debility, is fatigued on the slightest exertion, or even speaking; pulse 112, weak and irritable, bowels costive. Upper dorsal and lower cervical vertebræ are painful on pressure, most severe about 3d and 4th dorsal; pressure aggravating symptoms. Had a child about three months ago, and did not recover well; three weeks afterwards was affected with violent pain at breast, for which she was three times bled, and as often blistered, with but partial relief. Has consulted three medical men, who uniformly recommended blistering the breast. Is much reduced in body, and considered by herself and friends to be consumptive. Three days previous to seeing her, she had come fifty miles by land and water for the benefit of sea air, and had caught a cold on her passage, to which she attributes the aggravation of her complaints. Day before this, had of her own accord, applied twelve leeches to side of head without benefit. She had two blue pills at bed-time, followed in the morning by a full dose of salts and senna, which procured copious evacuations with abatement of head-ache and febrile symptoms. Was ordered twelve leeches to upper part of dorsal vertebræ, to be followed by a blister. As she lived a considerable distance from me, it was ten days before I again saw her. She was now so much better, that she was able to walk about, without fatigue; appetite and strength improving every day. Is still suckling her child; says she has not enjoyed such health since delivery, and describes her feelings after leeching as if something were wanting about her breast; blistered surface has discharged well, but is now healed. Pain in spine confined to between 3d and 4th dorsal vertebræ, and much easier. Nine leeches, and a small blister about the size of a crown-piece kept open about eight days, removed her whole train of symptoms. I saw her about four months afterwards with slight return of same complaint, which was easily cured by the same treatment. In this case, the horizontal position was only enjoined a few days at first. In some cases the horizontal position is a *sine qua non* in the treatment; in others it is by no means essential.

Case 4. 28th Aug. 1829. I was called to Miss B. æt. 20, of delicate habit, who said she was ashamed to see me, as she could not tell what she had to complain of, only she felt weak, and her appetite was gone. Pulse 80, feeble, tongue moist, bowels natural, catamenia regular; stools much, body reduced to a skeleton, so dull in spirits that she can scarcely be roused to the least exertion. On strict interrogation, admits having a slight feeling of weakness or weariness at breast. Upper dorsal vertebræ are tender on pressure, most about the fourth on left side; right quite free from pain, pressure aggravating symptoms at breast. About six weeks ago, after assisting the maids a short time at a washing, her hands and forearms became covered with a florid eruption, which soon disappeared, and was succeeded by a slight cough and uneasiness about chest, which have since gradually worn away. Was treated with a solution of tart. antim., bark, and other tonics, but without effect. Six leeches were ordered to pained part of spine, which procured immediate relief. She was now sensible she had been labouring under more oppression at breast than she had been aware of. A small blister produced such constitutional derangement, and aggravated the symptoms so much, that I did not think of re-applying it. A few leeches were applied every second day for a while, making in all thirty-one, which along with the horizontal position, greater part of the day, effected complete recovery. During the application of the leeches she uniformly felt herself getting better, symptoms returning a little before next application, which gradually wore off towards the end. In less than four weeks her health and strength were completely restored.

Case 5. M. C. æt. 23. In summer, 1826, I attended this girl in fever. She was advanced in the disease, and had been neglected before I saw her; was

treated with local bleedings, blistering, emetics, purgatives, &c. as symptoms indicated. Her recovery was slow, and accompanied with a host of nervous and hysterical symptoms, which have continued more or less ever since. About two years ago the abdomen getting enormously distended and communicating a doughy feel to the fingers, there was little reason to doubt that her bowels were loaded with feculent matter. A course of purgative medicine was ordered, which brought away a prodigious quantity of dark pitchy looking feces, mixed with mucus and slimy matter. The belly, however, continued nearly of the same size, but a little softer; the stools were less in quantity, but much the same in appearance. Her strength getting exhausted, and her faith having failed her, I was obliged to abandon the practice. About six months after this she complained of pain in right hypochondriac region, aggravated on pressure, with frequent attacks of bilious vomiting; upon questioning her she admitted having pain about shoulders, particularly on right side. Several medical gentlemen saw her, and she was more than once blistered over the region of the liver, and salivated with mercury, to no purpose.

On the 18th of December, 1829, I was again called to see her. She had been getting worse for some months, and is now confined to bed. Complaints of pain and giddiness of head, pain and numbness about shoulders and arms, particularly right arm; dull pain over region of liver and abdomen, most acute about caput coli, occasionally stretching down thighs: is much harassed with vomiting of acrid bile; eyes weak; speech has been hesitating for some months, is worse of late, stops often in the middle of words; abdomen reduced to natural size and feel; bowels open; pulse eighty, weak; menses have made their appearance all along, but a little irregularly. Says she is pretty easy while lying in the horizontal position, but all her symptoms are aggravated on getting up: gets so faintish in the erect position, that she is soon obliged to lie down. These symptoms led me to suspect the spine to be in fault: it was accordingly examined, and found tender throughout its whole extent, but particularly the cervical, lower dorsal, and middle of lumbar vertebræ; pressure, or the application of a sponge dipped in hot water, on the lumbar vertebræ, gave pain, aggravating pain in abdomen, and particularly at caput coli; pain shooting down thighs, along the course of crural nerves. On pressing the inferior dorsal, pain stretches forward to right hypochondriac region, which she describes as distinctly the pain she has so long felt there: pressure on the inferior cervical produced a feeling of pain and numbness about shoulders, stretching down right arm, which has not had proper feeling for some months: but the most remarkable symptom of all is in the upper cervical; slight pressure there increases the shooting pains over the head, and causes a feeling of constriction about the throat, increasing the impediment in speech, and causing difficulty of respiration. When the pressure is increased, the pain becomes intolerable, the function of voice ceases, and the respiration is as completely stopped as if she were suspended by a rope round the neck. Whatever part of the spine was pressed on, pain was felt shooting along the course of the nerves, but most severe on the right side. The upper cervical and inferior dorsal were the two points most severely affected, and from which I judged it not unlikely the pain might spread along the spine: these I resolved first to attack. Six leeches were applied to upper cervical, and same number to lower dorsal vertebræ. These were repeated with relief, and two small blisters were afterwards applied. In five days, when I again visited her, I found that the leeches had bled very freely, and had produced considerable debility: her face was pale and blanched, and she could with difficulty turn in bed. The blistered surfaces discharged for about a fortnight. It was a month before she gathered much strength: these symptoms, however, were mitigated, and she spoke more freely. By the beginning of April she was able to be out of bed the greater part of the day, spoke without hesitation, and was nearly free from former symptoms, but dorsal vertebræ, between ninth and tenth, were still a little tender. By the middle of June she could take exercise out of doors, had a good

appetite; and the spine was sound, except between ninth and tenth dorsal vertebræ, where there still was tenderness on pressure, shooting through to right side, in which she still felt some uneasiness. Considered herself in better health than at any time since attack of fever.

The horizontal position may have been a good adjunct here, but that it was essential to the cure does not appear, as she was obliged to keep it most of the time for nearly six weeks before the treatment commenced, notwithstanding which she became every day worse. That the origin of the nervous system was in fault since fever, I doubt not, and that timely detection and timely treatment might have saved her from nearly four years' suffering and misery, and preserved her constitution from a shock from which it can never fairly rally, I as little doubt. The pain in side and shoulders and vomiting of acrid bile, were certainly symptoms of inflammation of the liver, but it is plain it was merely suffering in function, from disease of its nerves, as the heart and stomach are often known to do from the same cause.

Case 6. A few weeks ago I was called to see a young woman twenty-one years of age, whose prominent symptom was vomiting of every thing she took. She had pain in right hypochondriac region, increased on pressure, and pains about shoulders, shooting down right arm, which she describes as stitches. Had a child in the sixteenth year of her age, from which she dates the commencement of pain in side; pain in shoulders more recent; dyspepsia of some years' standing, but vomiting has only been distressing of late. Has been often bled and blistered for pain in side, (supposed to be hepatitis,) and sometimes with partial relief. Had consulted a medical practitioner a few days ago, who ordered a large blister to be applied over region of liver. Ninth and tenth dorsal, and fourth, fifth, and sixth cervical vertebræ, are painful on pressure, the pain stretching to pained part in side and shoulders. Nine leeches were immediately applied to ninth and tenth dorsal vertebræ, and, in a few days, same number to inferior cervical. Eight days after this, she came a distance of about four miles, to show me how much improved she was. Vomiting gone, pain in the shoulders and side much better, lies in bed most easily on right side, which she has not been able to do since she had the child; pained parts in spine still a little tender. Leeches ordered to be reappplied.

I saw her about a week ago, stout in body and looking well. Says that she enjoys excellent health, to which she has been a stranger for more than five years. The horizontal position was not observed in this case.

I have only met with one case of this kind which defied remedial measures; the prominent symptom was tickling cough: time, however, effected the cure. Several cases have been relieved, although they could not be said to be cured. This disease sometimes accompanies consumption, yet in one case I had strong reason to believe that it roused up fatal tubercular phthisis.

That this class of complaints is seldom seen, except in the debilitated walks of life, appears to be unfounded. Any thing here, in place of a town, scarcely deserves the name of a village. My practice is entirely in the country, in a place, too, famous for the salubrity of its air, and the healthiness of its inhabitants; yet in such a place spinal irritation holds no inconsiderable rank in the catalogue of human calamities.

As a stimulus to the younger candidate for medical eminence, I may be allowed to mention that, in the diagnosis and treatment of no other disease have I gained so much credit and confidence in families. I have cured several who have been long considered to be falling victims to consumption, the gaunt and unrelenting destroyer of mankind. Restored to the arms of their families and friends from a long period of hopeless sufferings, they often know not in what terms to express their gratitude.

31. *Ulceration and Perforation of the Heart.*—An instance of this is recorded in a late number of *La Lancette Française*. The subject of this case was a female fifty-one years of age, admitted into the Hôtel Dieu on the 8th of March

last. She exhibited some obscure gastric symptoms, and could very imperfectly describe either the nature or seat of her complaints. Her tongue was pale and slightly furred; *her pulse regular*, rather more frequent than natural; bowels inactive. Her disorder appeared so slight that little attention was paid to her. Eleven days after her admission she suddenly died. A short time previous she had been tranquilly conversing with her neighbour, and did not make any complaint of pain or unusual uneasiness.

On examination the left ventricle was found perforated at its posterior and middle part by an ulcer, or apparently two ulcers, one commencing internally, the opposite to it externally; at least the shape of the hole gave that idea, it being larger externally and internally than in the centre, and therefore presenting an hour-glass figure. The fleshy substance of the heart was not softened, except for a short distance around the ulcers. Thick, red, fibrous layers were found on both surfaces of the heart. The heart was enlarged, but without any thickening of its parietes. The ventricular valves and orifices of the vessels were normal.

MATERIA MEDICA AND PHARMACY.

32. *Combination of Nitre and Calomel.*—M. BURDACH states in a recent German Journal, that the addition of nitrate of potash prevents calomel from producing salivation, the nitre causing its prompt expulsion by stool. This combination he also asserts to be a powerful derivative, and relieves the head, the chest, and the liver, more effectually than either of them will do separately. Certain diseases, as hydrocephalus, croup, &c. he adds, require large doses of calomel, and if this medicament is not eliminated from the system, it becomes a poison: the addition of nitre prevents this unfortunate result.—*Gazette Medicale*, July, 1831.

33. *Correcter of Opium.*—According to M. PUCHELT, a German physician, the sulphate of soda is an excellent correcter of the unpleasant effects of opium, given in the proportion of a scruple to half a grain of opium. This dose may be repeated two or three times a day. In combination with Glauber's salt, opium he says, may be administered in cases where slight plethora, local or general, prevents recourse being had to opium alone; in obstinate hæmorrhages, principally, this mixture will produce the happiest effects. But if sulphate of soda prevents the congestion which opium sometimes produces, M. P. says that there is another article which corrects its narcotic, without diminishing its sedative, effects—this is the castor. The combination of opium and castor he considers very useful in cases of hysteria.—*Ibid.*

34. *New Process for preparing Medicinal Prussic Acid.*—MR. THOMAS CLARK, describes in the *Glasgow Medical Journal* for May last, the following process for preparing Medicinal Prussic Acid, by which, he says, that every Apothecary may make that article cheaply, and of uniform strength.

“Take of Tartaric acid, 72 grains: Cyanide of potassium, 32 do.; Distilled water, an ounce.—In an ounce phial, furnished with a cork or stopper, which should, by previous examination, be ascertained to be sufficient, dissolve the tartaric acid in the water. Then add the cyanide of potassium, and immediately thereafter insert the cork or stopper, which for a little must be preserved firmly in its situation by the finger. Meanwhile agitate, keeping the phial immersed in a basin of cold water, in order to repress the heat produced in the process. When all action has ceased, set the phial aside in a cool and dark place for twelve hours, in order that the cream of tartar formed may subside. Afterwards decant the liquor, which preserve in a phial in a cool and dark place.”

Those who are accustomed to chemical calculations, will easily perceive that

the following result ensues:—We employ Tartaric acid, 72 grains ; Cyanide of potassium, 32 do. Total, 104 grains.—These produce, Cream of tartar, 91 grains; Hydrocyanic acid, 13 do. Total, 104 grains.

But an ounce of water dissolves no more than about five grains of cream of tartar; and its soluble power is likely to be diminished by the presence of hydrocyanic acid. Therefore all the cream of tartar formed, except five grains, that is, 86 grains, will subside ; and the water will hold in solution, besides those five grains of cream of tartar, 13 grains of hydrocyanic acid. But this solution will contain about 26 full doses (we will say 25) of hydrocyanic acid. Of cream of tartar, therefore, each dose will contain only 5.25, or one-fifth of a grain. The presence of this small quantity of cream of tartar would be regarded as an impurity by chemists, who would separate it by distillation. But little regard will the physician give to the presence of cream of tartar, amounting to the fifth of a grain in a dose. In employing prussic acid, indeed, the objects of the chemist and of the physician are altogether different. Purity is the desire of the chemist ; uniformity of strength that of the physician. A disregard of this difference has too often in pharmaceutical processes caused chemical purity to be dearly purchased at the expense of medicinal uniformity.

“In the above process, provided we retain the same quantities of tartaric acid and of cyanide of potassium, it is plain that, by varying the water, we may obtain a solution of prussic acid of any given strength. The above formula is adapted to the strength suggested by Vauquelin, namely, water one ounce, to the prussic acid which may be obtained from one drachm of cyanide of mercury; for this yields the same quantity of that acid as 32 grains of cyanide of potassium. This strength of Vauquelin is that most generally in use in this country ; and it has been adopted in the last edition of the Dublin Pharmacopœia. Magendie’s solution of prussic acid is about four times as strong.

“In the common processes for preparing prussic acid, one great cause of the various strengths produced by those processes, is the great volatility of prussic acid. To be aware of the great risk of loss by this volatility, put a drop of a solution of pure hydrocyanic acid on a bit of litmus paper. This paper will be immediately reddened, as by any other acid ; but, so very volatile is this acid, that the redness will vanish in two or three minutes, ere the drop has visibly diminished in size. But the solution will be affected in its strength by this volatility of the acid, not merely according to the manner in which it is prepared, but also according to the manner in which it is preserved. Here, the volatility being too little feared, is too little guarded against. I would enforce, therefore, great care as to the sufficiency of the cork or stopper; and the precaution of inverting the phial is worthy of adoption. The further precautions of excluding light and avoiding heat are necessary to prevent a spontaneous decomposition which prussic acid sometimes undergoes.”

35. *Ioduret of Lead*.—From the experiments of Drs. COTTEREAU and VERDE DELISLE, made at the hospital de la Pitié, in the wards of M. VELPEAU, it appears, that of all the preparations of iodine, the ioduret of lead possesses, in the highest degree, the property of resolving scrofulous and scirrhus engorgements.—*Journal Hebdomadaire, April, 1831.*

36. *Solution of Cantharides*.—Sir CHARLES SCUDAMORE recommends as a substitute for the common blister, a solution of cantharides in concentrated acetic acid. This solution is rubbed on the surface of the part which it is wished to vesicate, with a small varnishing brush, for about two minutes, or until a slight flush of redness is perceived. In less than the usual time, free vesication is produced, and a copious discharge of serum follows.—*London Medical Gazette, June, 1831.*

37. *Formula for the exhibition of Hydriodate of Iron*.—For a Bath. R. Hydriod. ferri, ℥ij. aquæ, q. s. M. The quantity to be progressively increased, for adults, by

half an ounce at a time.—*For Lotions, Injections, &c.* R. Hydriod. Ferri, $\mathfrak{z}$ ss. Aquæ Distillat. $\mathfrak{H}$ j. M.—*For Pastiles.* R. Hydriod. Ferri, $\mathfrak{z}$ j. Croci Stigmat. $\mathfrak{z}$ viii. Sacchari, $\mathfrak{z}$ viii. Gum Tragacanth, q. s. Fiant Pastil. 240. Eight or ten to be taken in the course of twenty-four hours, and the dose augmented by one every three or four days. They are recommended in enlargement of the cervical glands, in chlorosis, and particularly in amenorrhœa.—*For Ointment.* R. Hydriod. Ferri, $\mathfrak{z}$ iss. Adipis, $\mathfrak{z}$ j. M. The size of a small nut to be used night and morning, rubbed into the thighs, in amenorrhœa and in leucorrhœa.—*For Tincture.* R. Hydriod. Ferri, $\mathfrak{z}$ ij. Alcohol. Camphoræ, aa. $\mathfrak{z}$ ij. M.—*For Wine.* R. Hydriod. Ferri, $\mathfrak{z}$ ivss. Vini (*Bordeaux*) $\mathfrak{H}$ j. M. A table-spoonful to be taken night and morning by adults, in scrofulous affections, &c.—*Lon. Med. Gaz.* Aug. 1831.

38. *Medicinal Properties of the Sulphuret of Carbon.*—The sulphuret of carbon, though discovered by Lampadius, in 1796, has not yet been introduced into the medical dispensaries. MM. Wutzer and Pellingham have lately investigated its properties with the following results:—

1. The sulphuret of carbon is one of the most powerful of the diffusible stimulants yet discovered.

2. It excites powerfully the activity of the heart and arterial system.

3. Its internal use quickly determines acceleration of the pulse, increased heat, and sanguineous congestion towards the skin, and genito-urinary apparatus.

4. The most remarkable secondary symptoms are, abundant diaphoresis, increase of the urinary secretion and of the menstrual discharge.

5. It has been used with the utmost success as a remedy in chronic rheumatism, and in gout where no fever simultaneously exists.

6. The dose in which it is fit to give it internally, is from three to eight drops, in any convenient liquid vehicle, or on a bit of sugar. It is also very useful as a liniment, which may be formed with sulphuret of carbon, $\mathfrak{z}$ ij. and camphorated alcohol, $\mathfrak{z}$ iv.; olive oil may perhaps be advantageously substituted for the camphor solution.—*Journal de Chimie.*

39. *Formula for Nitrate of Silver Ointment.*—The following is the formula given by Mr. MIDDLEMORE for this ointment:—R. Argent. nitratis, gr. ij.; Liq. plumb. acetatis, gtt. xv.; Ung. cetacei, $\mathfrak{z}$ j. M. The quantity of nitrate of silver may be gradually increased to six or even seven grains, as the eye becomes accustomed to its use. It is highly important that this ointment should be carefully prepared, and that the various substances of which it is composed, should be accurately blended; and that the nitrate of silver should be reduced to an impalpable powder before it is mixed with the spermaceti ointment. The ointment should not be used after it has been prepared for a longer period than twelve or fourteen days.

Mr. Middlemore directs the ointment to be applied in the following manner. Having placed a portion of the ointment, about as large as a small split pea, upon the blunt extremity of a probe, take hold of a few of the eyelashes, and a portion of the surrounding skin, and elevate and slightly evert the upper lid; then direct the patient to look downwards, smear the ointment upon the upper part of the eyeball, and withdraw the probe on the temporal side of the eye; in this way the ointment becomes thoroughly dissolved, and equally diffused over the whole of the corneal surface.

Mr. M. employs this ointment in various affections of the eye.—*Midland Medical and Surgical Reporter*, August, 1831.

40. *Asparagus as a Sedative.*—The *Gazette Medicale* of the 28th of May last, contains a memoir by M. ETSEBE DE SALLE, on this subject. The attention of the profession was first called to the sedative properties of asparagus by M. Broussais about two years since. (See this Journal, Vol. V. p. 499.) The diuretic property of this vegetable is known to every one; M. de Salle attributes to it

another, which we confess never to have observed. He says that it excites, in persons whose larynx is susceptible, in half an hour or an hour after it is eaten, a violent constriction of the throat; there is a considerable irritation of the larynx, and the glottis has a tendency to spasmodic contraction. This painful state ordinarily ceases in about twenty minutes. For a knowledge of its calming property, we are indebted to a gentleman, not of the profession, affected with a chronic irritation of the heart, and who observed that he suffered much less after eating asparagus. As this vegetable could be obtained but for a short season, this gentleman applied to M. Johnson to prepare for him a syrup, which he might take when the plant was not to be procured. M. Johnson, anxious to obtain, in an isolated state, the active principle of the vegetable, undertook, with the aid of MM. Vauquelin and Robiquet, its analysis. He ascertained that the constituent principles of the asparagus, are asparagine, a green resinous matter, wax, albumen, phosphate and acetate of potass, and finally, mannite. Upon experiment, the asparagine was found diuretic, but not sedative, and the green resin slightly sedative; the combination, however, of the asparagine and the green resin was found most efficacious.

In our seventh volume, p. 232, we published the method recommended by Cbevallier for preparing the syrup of the asparagus; the following is that employed by M. Johnson:—Take eight pounds of asparagus, cut it in small pieces, bruise it, and express the juice by a strong pressure. Evaporate the juice to a syrupy consistence, then allow the asparagine to crystallize; decant, and again evaporate the liquid to a dry extract.

Take the green part of the asparagus shoots, and macerate them for fifteen days in half their weight of alcohol, at 22°. Express, and take enough of it to entirely dissolve the dry extract; when the extract is dissolved, evaporate, to remove from it the alcohol. Use this to dissolve the asparagine, and then make the syrup.

We hope that some of our pharmacutists will undertake to investigate the active principles of this plant, and the best mode of obtaining it, and will form a preparation of it, to enable physicians in this country to determine its therapeutic properties. If it really possesses those attributed to it, there are many cases in which it is calculated to afford important relief. M. de Salle relates two cases of distressing palpitation of the heart, in which the most manifest relief followed its administration.

PRACTICE OF MEDICINE.

41. *Treatment of Croup.*—In the second number of our esteemed cotemporary, the *North of England Medical and Surgical Journal*, there is an interesting paper on the treatment of Croup, by W. GOODLAD, Esq. of Bury, and as the author's views differ in several points from those usually received, we shall lay an account of them before our readers.

When effusion has taken place in this disease which may be known by a rattling respiration, with disposition to sleep, pale or livid lips, and cold extremities, Mr. G. says that death must follow, and that it will be accelerated by the remedial means we should otherwise employ. "But so long," he says, "as the attack is accompanied with a high sounding cough, without rattling, the mischief whatever it may be, is not irremediable; I would go much further, and declare it ought to be arrested, and feel a perfect conviction, in the majority of cases, that it may.

"I am aware that there are instances on record, where death has taken place, though no effusion could be discovered afterwards. These cases probably gave rise to the doctrine of spasm, regulated the treatment in many cases, and still are quoted with more observance than they appear to me to deserve. But granting their validity, it has not yet been proved that a more active treatment

would not have saved life; nor is death, under such circumstances, a common occurrence, where no remedies have been used. Amongst the poorer classes in Lancashire, who seldom call in assistance for croup, until all chance of recovery is destroyed, I have never yet seen a case terminate fatally, without an effusion in the bronchia being conspicuous several hours before death; and I am much disposed to attribute such an event where it has happened, to the remedies made use of, rather than consider it a natural termination of the disease; particularly as some of those commonly in use are well calculated to produce it.

"Amongst these," he adds, "the warm bath is one of the most active, and, at the same time, most injurious; and I cannot imagine how any one, who has once witnessed its effects, can again recommend it in croup. It is, in my opinion, so decidedly hurtful, by quickening the circulation, that I should interdict its use in almost all inflammatory cases. The warm bath, I think, is never useful unless prolonged until faintness is produced; and in the early stages of inflammatory complaints, it is often impossible to produce this effect, until the heart beats more than 130 times in a minute, which is a degree of excitement I think unwarrantable. If resorted to later, effusion is brought on sooner than it would otherwise supervene; and many practitioners could, I think, call to mind cases, where its use has been followed by unexpected death: the vessels previously emptied perhaps by bleeding, having given way, and apoplexy supervened."

Emetics are equally condemned by Mr. G. "The action of vomiting consists," says Mr. G. "not merely in ejecting the contents of the stomach, for respiration is suspended by it, whilst the heart continues to act, and by propelling blood to the lungs, the balance between these functions is so far destroyed, that the greatest muscular exertions become necessary to restore it. These struggles are more violent and injurious in proportion to the progress of the disease, so that when fully formed, emetics, I think, ought never to be exhibited."

Nauseating doses of tartar emetic, he also disapproves of. "There is great reason," he justly observes, "to dread the action of this medicine, which too often acts as a poison on children when in small doses, and it appears to me that the means of relief are very disproportioned to the violence of the disease; and, in the majority of cases, very inadequate to remove it.

"A further, and if possible, more formidable objection, is the length of time occupied in giving this treatment a due trial; and where three or four hours are allowed to pass away, exhibiting only small doses of nauseating medicines to cure croup, the practitioner becomes responsible to a degree which can only be estimated by the effects resulting from such a treatment."

Blisters, applied upon or in the neighbourhood of the windpipe, in the early stages of croup, he considers as decidedly injurious. Here, also, several hours must elapse before the operation of the blister commences, much time is therefore lost which can never be redeemed; and when the blister does rise, the sense of stricture about the larynx is increased by it, the constitutional disturbance heightened, the pulse quickened, and the inflammation rendered more violent. A heated and close atmosphere is also injurious.

"From what has already been said, it is evident that two indications are necessary to be attended to, in the cure of croup; the first is to subdue the inflammation of the windpipe, the other to relieve the oppressed circulation. Without the first object be attained no means will avail; nor will it in every case be safe to wait until that can be accomplished, before we relieve the system at large. Danger may be imminent from either of these causes, and we have often to determine whence it is most so, and to regulate our practice accordingly.

"The causes which produce croup, its symptoms and progress, alike indicate the necessity of blood-letting, and this remedy, in comparison with which all others sink into insignificance, should be immediately resorted to. Any quantity of blood may be drawn by leeches, and the local complaint, in almost all cases, be subdued by them: for if one crop of leeches do not remove it others must follow, until the breathing becomes free, or the child so faint that further

depletion would be unsafe. This mode of taking blood, by emptying the vessels, which are inflamed will, it is evident, afford relief, with least expense to the constitution: but when the complaint has existed many hours, and the jugular vein becomes alternately distended and collapsed, during each inspiration; when the angles of the mouth are drawn downwards, every muscle of the neck brought into action, and the breathing consists of a series of gaspings, there will not be time afforded for leeches, and not a moment must be lost. The external jugular vein should be immediately opened with the lancet, though this operation is sometimes exceedingly difficult, requiring a quick eye and a prompt hand to catch it between each inspiration. The struggles of the patient, and the great contraction of the muscles, add to the difficulty; but no consideration should deter us from giving instant relief, and no other method of taking blood seems to afford the same immediate benefit both to the head and breathing. The child may be on the brink of effusion, and every minute lost is matter of serious reproach; but this urgency of the case, which if not attended to, will speedily be followed by stupor, and that loss of sensibility over the whole frame, so favourable to effusion, renders additional precaution necessary; for if the depletion be carried too far, or the vessels emptied very suddenly, that event so much to be dreaded will be accelerated.

“The finger should therefore be kept upon the pulse whilst the blood is flowing, and the further flow of blood prevented, if the breathing be properly relieved, before faintness is induced. It is safer to trust the further treatment of the case to leeches, which are indeed often necessary even when the jugular vein has been opened, and the loss of blood carried for the time to the greatest extent. This will not be matter of surprise, when we consider how little connexion there is between the arteries ramified upon the inner surface of the wind-pipe, and the external jugular vein. It is safest, therefore, to unload the general circulation, where that is requisite, from the system at large; and treat the local complaints with leeches where they can be easily obtained; but if not, the finger may be placed upon the orifice for a short time, when the breathing is relieved; and another and a smaller quantity of blood be taken from the same orifice, until faintness deter us from proceeding farther.

“I have generally directed leeches to be put on the lower part of the wind-pipe, below the *pomum adami*, because they bleed quite as well as on the upper part of the tube. The blood is drawn from those vessels, which have most recently taken on the diseased action; the inflammation is thereby prevented from extending, and the vessels already weakened by disease, are emptied more gradually and with less danger of their giving way.

“In whatever manner the blood be taken, a degree of faintness must be produced, and kept up for some time, which renders the continuance of inflammation impossible, and the patient watched most narrowly, lest reaction come on, and more leeches be necessary. It is now that the ear of the practitioner will be most useful to him, and the sound of the cough, the noise which is made by the air passing through the inflamed part, and the frequency and freedom of the inspirations must be closely attended to. He should never leave the bedside of the patient until he is satisfied on every one of these points, since he cannot do so with safety, or consistently with that duty we all owe, where the life of a fellow creature is at issue. By and bye, he will be rewarded by hearing the cough alter its tone, it becomes loosened, there is a little expectoration, and the child is safe.

“It is difficult to convey to the mind of the reader, those shades of difference, which minute attention will soon teach him, and it is better perhaps to rest satisfied with directing his observation to those points in practice which are really important. But I wish to repeat, that a stridule will remain after the respiration has become free, and though neither this symptom, nor the high sounding cough, afford sufficient reason to apply more leeches, yet, the long continuance of either of them, is always an object of suspicion, and unless the inspirations be

free, full, and slow, he may rest assured that the inflammatory action is not entirely removed.

"I have hitherto considered croup a primary disease, but the majority, and the most severe cases are accompanied with, if not produced by, teething, which keeps up the irritation, produces relapse whenever reaction takes place, and is accompanied with determination to the head, and a disposition to inflammation and effusion there. The state of the gums ought always to be attended to, and they should be freely lanced, if there be heat or thickening over them in any part; and this precaution is often necessary, until the child has cut the first of its permanent teeth.

"During this time the bowels will have been opened by a dose of calomel and jalap, or of castor oil; and the only other medicine I am in the habit of giving, is calomel with opium in large and frequent doses. This combination, which before the loss of blood, would be highly pernicious, if given only when the head is freed from oppression, and the breathing is quieted, has always appeared productive of the best effects. It produces sleep, appeases the cough, creates determination to the skin, and prevents reaction; while the calomel acts here as in *iritis*, by preventing effusion and producing absorption.

"Another advantage arising from the combination of opium is, that it enables us to give a larger quantity of calomel, than would be otherwise practicable without its passing off by the bowels; and as the glandular system in children is seldom affected by it, and *ptyalism* therefore rarely induced, we need not be deterred from giving it largely, and have occasion only to watch its operation on the bowels."

42. *White Agaric a cure for night sweats.*—In the *Journal der practischen Heilkunde*, for March, 1830, M. BURDACH highly extols the powers of the white agaric (*boletus loricis*) in the night sweats of phthisical patients. A single dose of it given in the evening diminishes, he says, the sweats the following night, and if repeated several evenings arrests this debilitating symptom.

The agaric is given in the dose of four grains in the evening. If the patient is not irritable, from six to eight grains may be given, and the dose even repeated during the day. It is given in pills with a bitter extract. In cases of habitual diarrhœa, the author combines the agaric with kino or alum.

43. *On Traumatic Tetanus.* By Dr. SIM.—"Morbid anatomy is not the only source from which we may derive a knowledge of the seat of diseases; physiology often enables us to point out what organs are in fault, when certain functions are disturbed, because we know upon what organs the healthy performance of those functions depends. Now, the symptoms of traumatic tetanus confine themselves so exclusively to the muscles, that it appears to me difficult to avoid the theoretical conclusion, that local injuries of the motory organs produce the disease, by throwing into a state of morbid irritation the common origin of the nerves of the motory system. I say morbid *irritation*, because we are not warranted either by the symptoms of the disease, or dissection, to affirm that inflammation is present in every case, or in every stage of tetanus: the vascular excitement, of which traces are found in the vertebral canal, is more likely to have been the effect than the cause of that irritation which is communicated to the motory system of nerves, in the same manner as over-excitation of the mind causes increased action of the blood-vessels of the brain. I would not, however, rest the opinion I entertain, that the profession actually possesses sufficient grounds upon which to found a rational treatment of tetanus, merely upon principles deduced from the doctrines of physiology. Dr. Perry appears to me to have undervalued the facts observed by others, as well as by himself, respecting the morbid anatomy of the disease; for in his own two cases, in the valuable collection of cases published by Mr. Adams, in the 10th Number of this Journal, and in the two fatal cases contained in my collection in the preceding Number, the *post mortem* observations confirm the conclusion, that morbid

irritation of the spinal cord had existed during life. Dr. Perry has added an interesting appendix to this proposition, by showing a connexion between the morbid changes within the vertebral column, and similar changes in the condition of the nerves proceeding from the wound: and although, in his first case, he states, that the cutaneous nerves were those in which traces of inflammation were detected, I must remark, that the superficial peroneal nerve, which he particularizes, is principally expended upon the extensor muscles; and, as it lies between the muscular fascia and integuments of the lower and outer part of the leg, it must have been implicated in the sloughing and inflammation at the seat of the injury.

What, then, are the means by which we may arrest this morbid action of the nervous system of the muscles, or restrain it within safe bounds until it has wasted its force? I believe that when one portion of a system of organs, engaged in performing the same or similar functions, is irritated, the remaining portions partake of the irritation by sympathy; and that when the irritation of the former is soothed, the latter partake in the relief. I believe also, that when an undue determination of nervous excitement has been directed to one system of organs, other systems, performing dissimilar functions, sustain a diminution of nervous vigour; and that the excitement of the former may be allayed by irritating the latter. I fear we have few direct means of allaying irritation in the whole or any part of the muscular system, which are not liable to the objection of producing a still greater degree of torpidity in the secretory organs. Perhaps the warm bath, as a general remedy, and mild applications to the wound, or, if a slough exists, a fermenting poultice, to counteract, by its carbonic acid, the tendency which dead matter has to fall into putrid decomposition, comprise the most useful sedatives: opiates ought not to be employed to such an extent as to suspend the action of the other remedies. But in our choice of counter-irritants we have a much wider scope, and in severe cases we ought to take advantage of the full range. The skin, the mucous membrane lining the alimentary canal and urinary passages, and the salivary and biliary systems, furnish instruments which may be employed advantageously for the purpose of withdrawing from the muscular system a portion of nervous irritation. There are, however, certain states of the constitution, in which this transfer of irritation is more easily effected than in others. It is effected with less certainty when the system is in full vigour, than when reduced. In inflammation of the serous membranes, for instance, in plethoric subjects, if we apply a powerful blister to the skin before the force of the circulation has been broken by copious blood-letting, we are more apt to aggravate the inflammation than to relieve it; but the same remedy has most happy results, when applied after adequate depletion has deprived the constitution of the means of supporting two extensive foci of irritation at the same time. Unless, therefore, a tetanic patient is already in a proper state for counter-irritation, blood-letting ought to precede the use of local stimulants, and it ought to be repeated at short intervals until a decided reduction of vascular action has been obtained. Blisters and tartar-emetic ointment applied along the course of the spine extensively and unmercifully, (if I may use the expression,) so as to ensure a severe and long-continued irritation, stimulating embrocations, antimonials, and the frequent use of the warm bath; purgatives of such a nature as stimulate more the mucous than the muscular coat of the alimentary canal, in which view croton oil is less eligible than oil of turpentine or neutral salts; calomel, to excite the biliary and salivary secretions; irritation of the urinary passages by setons or bougies, or by cantharides applied to the denuded surface of the cutis, or by the internal use of oil of turpentine;—these constitute the means of counter-irritation, which have hitherto been employed with greatest success, and which, I trust, if employed consistently, energetically, and in combination with each other, will, ere long, deprive this frightful disease of more than half its terrors.—*Glasgow Medical Journal*, May, 1831.

44. *Treatment of Gout.*—We copy from a recent No. of the *London Medical Gazette*, the following analysis of a paper read to the College of Physicians, by its learned president, Sir HENRY HALFORD. Few if any living physician has had more experience in the treatment of gout than Sir Henry, and his opinions are entitled to the most respectful consideration.

"Sir Henry remarked that he felt as if some apology were necessary for directing the attention of those present to a complaint on which so much had been written as gout; but, said he, 'I rest assured that you will receive in good part the result of my long experience in the treatment of that disease, and that if I state to you that there is no malady to which I am called upon to administer that I prescribe for with so much confidence in the resources of our art as for gout—formerly that opprobrium medicorum, you will give me willingly a few moments of your attention.' On the various seats of gout he would not dwell: in fact, it was to be met with in almost every part of the human frame. Some believed they had seen it in the eye, and he had himself witnessed it in the kidneys, in the urethra, in the prostate gland, and in the tonsils. One of his colleagues had suffered from it in these, and he mentioned an eminent physician in the country so harassed by it, and so disappointed by finding no relief from the usual remedies for quinsy, that at length he plunged a lancet into it, in case any deep-rooted collection of matter had taken place. None followed, but the gout was dislodged, and in a few minutes made an attack upon the great toe. The angina disappeared, but the disease ran its usual course in its new situation.

"Among the various remedies for gout, Sir Henry's dependence rests on colchicum. Under ordinary circumstances of gout in the extremities, he does not commence its use immediately, but postpones the antidote till the disease shall have become fixed: he then directs the wine of the root, prepared according to the formula of the pharmacopeia; and from this he expressly declared that he had not known 'a single instance of any untoward effect.' Frequently it removes the complaint without the manifest increase of any secretion: sometimes it causes perspiration, and sometimes acts as a diuretic; but so far is it from being apt to purge violently, as the eau medicinale was wont to do, that it is necessary in most cases to add a little sulphate of magnesia. The following is Sir Henry's prescription:—A saline draught, with camphor mixture: a drachm of syrup of poppies; and not exceeding from thirty-five to forty-five minims of the vinum colchici at bed-time. In the morning the draught to be repeated, but with a little modification, viz. only twenty-five minims of the colchicum wine and half a drachm of the syrup of poppies, while to this is added a drachm of Epsom salt. This method is to be pursued for several successive days, and then followed up by a pill, composed of three grains of an acetic extract of colchicum*, and one or two grains of Dover's powder, with a like quantity of compound extract of colocynth, the whole being terminated by a mild purgative. 'It had been argued,' said Sir Henry, 'that it had been laid to the charge of colchicum that its good effects were but temporary: now, even if it were so,' he asked, 'whether three or four attacks, of as many days each, were to be compared in the extent of suffering they produced, with the weight of a six weeks confinement, spring and autumn, which used to be the case before the virtues of colchicum were known' In addition to which, the evils resulting from the formation of chalk stones in the joints are now almost entirely done away—by the controul exercised by this medicine over the inflammatory stage of the disease. But, besides, Sir H. Halford's experience is against the correctness of the opinion that gout returns more frequently under the use of the colchicum: on the contrary, when the vinous infusion has been followed up by the acetous extract, he holds himself justified in asserting that the attacks are removed to as long intervals as they used to be when left entirely 'to patience and flannel.' The learned author of the paper did not, however, re-

* Made by evaporating an infusion of the root in vinegar.

commend the above as a specific treatment to be adopted in all forms and varieties of gout, but as one of general application, requiring to be modified with varying circumstances. Occasionally some light preparation of bark is required in worn-out frames, to reinvigorate them after the colchicum: occasionally a blue pill is of service in restoring the flow of bile when it has become deficient. Of the different preparations of colchicum an infusion of the root in sherry, has appeared to Sir Henry to be decidedly the best: that made from the seed is apt to excite insupportable nausea, and when this has once happened, it is in vain that you urge a patient to try it again: he prefers the acute agony of the disease to the distressing misery of the remedy.

"The learned President proceeded to state that colchicum was not a new medicine, having been used in the sixth century, under the name of hermodactyle. Being desirous to ascertain whether this was identical with our colchicum, he had procured some from the market at Constantinople, specimens of which were laid on the table: they appeared to be the same as the common meadow saffron, and Sir Henry is about to make trial of them in gout, in the same manner as colchicum.

"In preventing the recurrence of the gouty attacks, by far the best remedy has appeared to be a few grains of rhubarb, with double its quantity of magnesia, every day; or some light bitter infusion, with a little tincture of rhubarb, and fifteen grains of the carbonate of potash, if the digestive powers were considerably impaired. Depletion, either by bleeding or strong purging, are to be avoided. But far more depends on the patient's management of himself than on any medicines, in keeping the malady at bay. He must live moderately, and dine earlier than the present fashion enjoins. Gentle, but regular exercise, and a mind free from anxiety, and not exhausted by deep study, are also among the precautionary measures; and in addition to these, the patient must be chaste. Pliny alludes to this, and uses a remarkable word in expressing it—*sanctitas*.

"In concluding his valuable and interesting remarks, the learned President stated that he had repeatedly seen the waters of Aix-la-Chapelle of much use in restoring the weakness of the knees and ankles, brought on by repeated attacks of other disease."

45. *Treatment of Chronic Dysentery by Sulphate of Copper.*—It may be recollected that some years since Dr. ELLIOTSON in a paper in the Medico-Chirurgical Transactions, recommended the sulphate of copper in the treatment of chronic dysentery. The following observations on this subject extracted from a clinical lecture given by him at St. Thomas's Hospital in March last will be read with interest.

"There was likewise presented a case of *chronic dysentery*, which exemplified the good effects of sulphate of copper united with opium. This man, like most of the patients that we take in here with chronic dysentery, I might say, perhaps, all, had been in a hot climate. He had several stools a day, and when he came in they were bloody. I began the sulphate of copper in doses of half a grain, three times a day, with half a grain of opium. These were gradually increased; but while I was employing them, there was no reason whatever for not having recourse to any antiphlogistic measures that might appear necessary. He complained of tenderness in the situation of the transverse arch of the colon; and, on that account, leeches were applied there from time to time. I think it impossible to say, as I have already mentioned, in chronic dysentery and chronic diarrhœa, whether there is ulceration or not; if, however, there be ulceration, that is no reason why a patient should not get well. Intestines are continually opened where cicatrices are seen, and sometimes very considerable ones too. You will find this mentioned by Dr. Latham, in his work on the Disease of the Penitentiary; you will find it mentioned by Andral. You will find that Mr. Howship mentions a case of cicatrization to a very great extent. I have frequently seen intestines in a state of ulceration at some parts, and of cicatrization at others, showing that ulcers had healed; therefore, whether there is chronic

inflammation merely in these cases, or whether there is ulceration in addition, there is no reason whatever for not persevering with our measures: the one case may be cured like the other. Chronic inflammation in the intestines will destroy life equally with ulceration. I have seen people sink under violent purgings, which have continued for some months, where there was not the slightest ulceration; and, again, I have seen persons who have lived for many months with their intestines ulcerated to a great extent. I never saw a greater mass of ulceration than in the intestines I showed you last Tuesday, and that man had unquestionably been in that state a great many months. The condition of the fæces is exceedingly various; sometimes they are bloody, sometimes they are not bloody at all. The man, to whose case I have just alluded, never had a speck of blood in his fæces; whereas, on the other hand, I have sometimes seen in mere inflammation a great quantity of blood. Then, with respect to pus, there never was the appearance of pus in that man's secretion: on the other hand, in diarrhœa, you will frequently observe pus, although there is no ulceration. In that man's large intestines, the whole mass of fæces was of the healthiest description.

"The present case was useful as showing a fact which is seen continually, respecting doses of sulphate of copper; namely, that the difference of half a grain may make all the difference in the benefit. This man took at last two grains, three times a day, with a certain benefit: but, not mending so fast as could be wished, the dose was increased to half a grain more; the result of which was, that he immediately began to improve rapidly. I believe I have mentioned before that it should be given in a solid form, and not on an empty stomach; and that it is best combined with opium, at least in the first instance. I have frequently given it with two or three grains of opium, and at last have gradually diminished the opium till I left this off altogether. As, however, besides being an astringent, it is acrid, it is best to obviate the effect of the acrimony by opium. Of course, where it is given with opium, you cannot tell what are the effects of the sulphate of copper and what of the opium, because the opium itself has a strong tendency to check the diarrhœa. It is only from the comparison of a number of cases treated with opium and sulphate of copper, with cases where opium only was employed, and from cases where the opium has been greatly diminished and omitted, while the sulphate of copper was increased and continued, that the fact can be ascertained; and by comparing cases where opium was first given alone, and then the sulphate of copper added. It is only by these observations that its use can be proved. Of its good effects alone, I have no doubt; but knowing the advantage of opium, I consider it my duty to give a patient all the benefit that medicine will allow, and therefore I unite them together, provided the opium do not disagree.

"There is a case in the same ward at this moment, of chronic dysentery, which was very bad, but is now doing exceedingly well, and which also illustrates the benefit arising from the addition of half a grain only of the sulphate of copper. It has occurred in a young man who, I believe, has been at St. Helena. His stools continued bloody; when he came in, he had a great many in the day, and had been ill a year and a half; he had ten stools a day, sometimes twelve, sometimes fifteen. There was tenderness of the abdomen, and, therefore, to give astringents without attention to the inflammatory state, would have been wrong. Astringents for the diarrhœa were indicated, but still there was so much tenderness that I thought it right to apply leeches to the abdomen, and he had twenty applied from the 2d till the 15th, and then I began to give him half a grain of opium, and half a grain of sulphate of copper, which was gradually increased till I came to two grains each; under which he continued improving, but not so rapidly as I desired. On the addition, however, of half a grain, he instantly began to mend very considerably. The last report is, that he had only one motion in the course of the twenty-four hours, and that of an healthy appearance. His stools before were liquid, and more or less bloody, but now they are generally healthy, and rarely show any blood."—*Lond. Med. Gaz. June, 1831.*

46. *Treatment of Neuralgia by Moxa*.—Mr. COOPER, in a short communication in the *North of England Medical and Surgical Journal*, for November, 1830, strongly extols the utility of moxa in that form of neuralgia arising from idiopathic inflammation of the nerves, and he relates four cases of neuralgia of the sacro-ischiatic nerve successfully treated by this mean. The chronic form of this disease usually bids defiance to almost every plan of treatment. Cupping, leeches, blisters, turpentine, tartar emetic, warm baths, carbonate of iron, &c. afford in some instances none, and in others only a transient mitigation from torture. In these protracted and severe cases, Mr. Cooper says, "the moxa operates a surprising change; immediately on its application, it entirely subdues the pain of the nerve, which in some cases never returns, when the metastasis is complete; in others the relief becomes permanent by establishing and perpetuating a discharge after the separation of the eschar."

"Artificial moxa may be formed by immersing lint in a strong solution of the nitrate of potash, and after moulding it into a cone and allowing it to dry, it will be fit for use. The application is made by placing the base of the cone over the affected part, and retaining it in that position till the whole is incinerated."

"CASE I.—John Robinson, aged thirty-two, by trade a wool comber, applied to me in the spring, 1827, for neuralgia of the sacro-ischiatic nerve, under which he had laboured above six months, he was quite emaciated, from intensity of pain, loss of sleep and appetite. The remedies that were tried gave no relief till the moxa was applied, which immediately relieved the pain, and he was soon restored to his wonted health and vigour—he has had no relapse."

"CASE II.—September 9th, 1827.—J. Hinchliffe, aged fifty, has had severe pain along the whole course of the sacro-ischiatic nerve some months, which has greatly impaired his general health, no plan of treatment was of any avail till the moxa was applied behind the trochanter, when the relief to the parts contiguous was immediate; it required a repetition however before it became permanent in this part. The pain continued in the leg notwithstanding the application of moxa twice to the hip, this was also entirely removed by employing the same agent over the nerve."

"CASE III.—Elizabeth Thomas, aged forty-three, has had severe pain in the sacro-ischiatic since December, 1828; in February, 1830, I applied a moxa behind the trochanter, which gave immediate ease. The pain still continued in the leg, for which a moxa was applied below the knee and was followed with the same favourable result."

"CASE IV.—May, 1827.—John Dobson, forty-five years of age, complains of pain along the parieties of the chest, which he has felt for several years, and which has progressed in spite of all remedies. On examination of the spine, there was considerable tenderness of the superior dorsal vertebrae, to this part a moxa was applied with complete success."

"Cases in confirmation of the efficacy of moxa in neuralgia might be multiplied, but those briefly detailed will suffice to recommend it, as deserving of a more extensive trial. So uniform has been the success of its application in my hands, that it approaches almost as near to a specific, in that form of the disease under consideration, as bark is a specific in intermittent fever."

47. *Inhalation of Iodine and Chlorine in Consumption*.—We hope in our next number to be able to present a summary of the state of our knowledge in relation to the effects of iodine and chlorine, in the treatment of pulmonary consumption; in the mean time the following remarks by the distinguished physician of St. Thomas's Hospital, Dr. Elliotson, cannot fail to prove interesting. We extract them from a clinical lecture delivered in May last, and a report of which we find in the *Medical Gazette*.

I have now used, says Dr. Elliotson, the inhalation of iodine in several cases, but I cannot say that in one it has yet effected a cure. I have used it in three cases, where there was decided excavation of the lungs, and in all three death

has taken place, I should think, much about the time it would otherwise have done. These were cases of excavation of the lungs; but whether it would cure the disease before excavation has taken place, I cannot, of course, pretend to say. I confess I have very great doubts on the subject; and when any person tells me that he has ascertained the existence of tubercles in the lungs, and found them disappear under the use of iodine or any other medicine, I must be well satisfied that that person is a *very excellent* auscultator, before I can give credit to his assertion. I do not think that many people are able to say in general with certainty that tubercles exist in a solid state, without excavation, and that, after a time, these tubercles disappear. I should very much doubt any observations of my own on such a matter, notwithstanding I have carefully attended to auscultation now for several years; because you cannot satisfactorily ascertain the existence of tubercles unless they are very numerous and aggregated so as to render one spot of the lungs solid. I have frequently found tubercles in the lungs after death, where no sign of them whatever was given during life. Where, however, they are aggregated, so as to form a mass, there, of course, on striking externally, you will find a dead sound, and there will be less respiration there than natural, or none at all. But persons ought to be exquisitely nice auscultators to be able to declare the existence of tubercles with certainty, unless the deposition is considerable. We know that in chronic bronchitis, large tubes may be blocked up for a time, so that no respiratory murmur can be heard at the spot, and that afterwards these tubes will become open, and respiration be heard. I have seen respiration of a whole lung thus absolutely suspended for a whole fortnight, without any bad symptoms, and then the respiratory murmur spontaneously return. When we reflect on this, and the extreme difficulty of detecting tubercles, if not thus aggregated, before excavation has taken place, we ought not to place easy faith in the accounts which are given of tubercles having existed in the lungs and been removed. I do not presume to assert that such things have not taken place, but I confess I would rather witness them myself than believe such observations on the statements of others, unless, indeed, they were the conviction of several persons, known to be excellent auscultators; not of one or two individuals. I should doubt my own observations alone; I would not assert that tubercles had existed, and been removed in a single case, unless several friends, on whom I could depend, confirmed my observations on the particular cases, excepting, of course, instances of tubercular *masses*; and that iodine will remove them I much doubt. I would not place any reliance upon the observations of any one who declared he could ascertain all by the naked ear that others could by the stethoscope; because this instrument affords infinitely greater nicety of observation. If the plug is removed, the sound of both the heart and respiration are greatly magnified; there are some places of the chest to which the ear cannot be applied, as, for instance, in the axilla; and the contact of the side of the head with the chest is so much greater than of the instrument, that adventitious rustling sound frequently obscures the observation: lastly, the stethoscope can be applied to each individual point of the chest successively, with extreme nicety and expedition. Of course, the naked ear will give great information. But the nicety of the stethoscope is altogether far greater.

I have, however, used iodine in other cases than these three, but what has been the result I do not know. Several cases I have not seen again, and others are still in progress; but I cannot say that in any of them there has been such an improvement as to make me entertain very sanguine hopes of ultimate success. At the same time it would be very wrong to discourage trials. Such attempts are in the highest degree laudable, and I have no great respect for those persons who think that the profession can never be improved, and are content with allowing their patients to die under the old-established jogtrot routine of means—well established as unsuccessful. We ought not to go on affording mere palliation when there is the slightest probability of doing real good, or of doing, in the slightest degree, more good than before, by any new means. I

think it shows a very narrow mind to set one's face against attempts at improvement. I therefore give credit to all gentlemen who suggest any thing new, and still more to those who make exertions to carry such things into effect; but certainly I have not found even such temporary benefit under iodine as would give me very sanguine hopes. When there has been no evidence of any thing more than membranous affection, good has accrued; and, in excavation, certainly some alleviation. But I have used chlorine with certainly very considerable alleviation. I am attending a lady at this moment, who could not bear the inhalation of iodine in the quantity of a drop of the saturated tincture to three-quarters of a pint of water; it produced irritation, and yet she is able to inhale, in the same quantity of water, twenty drops of the saturated solution of chlorine, and the effect has been such, that her cough is nearly gone, and her expectoration reduced in a very great degree. I cannot believe that she will get well; but the amelioration has been such as I never saw before under the use of narcotics, or any other means whatever. There is a patient in this hospital labouring under phthisis and other complaints, and very bad he is, who could not bear the iodine. He used the smallest quantity that can be employed, but it immediately produced uneasiness, whereas he bears chlorine very well. In him the expectoration and the cough have been so reduced, that he will hardly allow there is any thing the matter with him. He says I have given him a new inside. The expectoration still exists to a certain extent, but the mitigation has been such as I never saw before in phthisis, from any means whatever. I have seen several other cases, both in private and public, where there has been a great mitigation under the use of chlorine; but whether it possesses curative powers, I cannot, of course, at present say. The iodine I know very frequently irritates, and it is necessary to add the tincture of conium, or of opium, or prussic acid, or hyoscyamus, to the solution, in order to prevent its injurious effects, but I have not found this necessary with chlorine; and when narcotics have been inhaled with iodine, they may often have deserved the whole credit, for I know that alone they are extremely useful.

I beg to observe that these are very crude observations, as I have only been using these remedies for two months. As, however, I shall not give any more clinical lectures till next season after the present month, it is right that I should communicate these things to you, because it will be for your advantage to know that chlorine, at any rate, will produce such an amelioration as I have now mentioned, and that iodine really deserves a fair trial. It is a striking fact that persons who cannot bear iodine in any quantity whatever, can bear a full portion of chlorine: it is not in one case or two merely that I have observed this circumstance.

I think, as medical men, we have all been much to blame for neglecting the inhalation of various substances, though proposed and practiced thirty or forty years ago; because we make applications to the surface of the body when it is variously diseased, and to the alimentary canal, and by inhalation we can make application to the air-passages themselves, when they are diseased. Nothing is easier than to make people inhale different substances by means of warm water. Inhalation is a more difficult thing if you employ gases; it cannot be done unless you have a large receptacle, with the substances of the exact strength that can be borne; but by causing the patient to inhale through impregnated water, so that the air is impregnated by the substance you employ, you can in that way employ any quantity you think proper of various substances. You have simply to take a common bottle with a broad mouth, and put a bung in it, with two apertures, through which you introduce two glass tubes. One of the tubes should pass to the bottom of the fluid, to let down the air from the atmosphere, and the air then rises up the fluid to the surface, and ascends the other tube, which merely passes through the cork, not descending so low as the surface of the fluid, and is breathed *from* at the opposite extremity by the patient. It is the simplest thing in the world, and can be employed without any expense.

48. *Powdered Alum, a cure for the Tooth-Ache.*—Dr. Kuhn asserts that alum, finely powdered, not only relieves the tooth-ache, but that it also arrests the progress of caries in the tooth. One or two grains are to be inserted into the cavity of the tooth, and this is to be repeated when the pain returns. In a short time, the pain will cease to recur, and the chemical action which constitutes the caries will cease.—*Gazette Méd. de Paris, June 5, 1831.*

49. *Antidote to Chlorine, and to Sulphuretted Hydrogen Gas.*—It results from the experiments of M. Hünefeld, 1st. That when inconvenience is experienced by the inspiration of too great a quantity of chlorine gas, the best remedy is to inhale sulphuretted hydrogen gas, which speedily dissipates the serious symptoms. 2d. That in case of suffocation or asphyxia produced by sulphuretted hydrogen gas, the inhalation of the chlorine, in its turn, is the best remedy.—*Bulletin des Sc. Méd. January, 1831, from the Archiv. für Medoz. Erfahrung, Sep. Oct. 1829.*

50. *Employment of Calamine to Prevent the Pits of Confluent Small-pox.*—Mr. GEORGE, in a communication in the *London Medical Gazette*, for April last, states that the pits caused by confluent small-pox may be prevented by covering the surface of the sores with prepared calamine. In a man, twenty-four years of age, who, about the tenth day of the disease, was much exhausted by the disease, and in whom the cuticle, from adhering to the bed-clothes, was abraded to the extent of six or seven inches on each hip, and to the same extent in each ham and on the back, Mr. G. covered the exposed surfaces with prepared calamine. In four days the cuticle was every where restored, and the patient recovered more rapidly than usual. There was afterwards not a single pit to be observed where the cuticle had been so extensively removed, and even the immediate surrounding pustules which were unavoidably covered with the powder, had not destroyed the cutis.

51. *On Opium in Inflammatory Diseases.*—Dr. Bow, in a paper in the *London Medical and Physical Journal*, for July last, strongly recommends the external application of Opium in inflammatory diseases. He employs it in the following form. R. Opii. ʒj.: Linim. Camph. c. ʒj. Digere per dies aliquot et effunde linimentum. Many cases of catarrh, he says, are cured by one or two applications of this liniment, as if by charm. We give one of his cases, that of a child nine months of age, affected with bronchitis. The breathing was difficult, the inspirations being short and frequent, accompanied with a wheezing noise; the face very pale, the lips having a purple tinge; skin exceedingly hot; hoarseness of the voice when the child cried; pulse rapid. The child had been ill for some days, but the mother, thinking that nothing ailed it except a common cold, did not become alarmed until this morning. Nothing had been prescribed before I saw it. Two grains of calomel were given, and the breast and back rubbed with rather more than a drachm of opiate liniment.

“The calomel was rejected from the stomach almost as soon as taken. After the application of the liniment, the child fell into a sound sleep: at two o'clock he awoke, and sucked greedily; and at our visit, a little after two, we found him in a profuse perspiration, the voice perfectly free from hoarseness, and the breathing comparatively easy. At four o'clock, the breathing had again become difficult, but, in degree, nothing equal to what it was in the morning: the calomel and liniment were repeated. At six o'clock, the child seemed calm and contented; the eyes were sprightly, and some colour had returned to the cheeks. A portion of liniment was left with the mother, with orders to apply it, should the breathing again become hurried.

“15th February.—About three o'clock this morning the liniment was applied, as the mother thought the state of the breathing required it. At our visit at ten A. M., we found that the bowels had been twice moved; the effect of the calomel. The child seemed quite well, and therefore nothing was prescribed.

At seven P. M. the child continued well. At the request of the mother, a portion of the liniment was left, to be applied if required.

16th. The liniment was not applied. Cured."

52. *Leucorrhœa*.—Dr. BAZZONI, in a memoir in the *Annali Universali di Med.* for February last, extols the powers of the *secale cornutum* in the cure of *leucorrhœa*. He relates eight cases of the disease relieved by that remedy.

53. *Dropsy cured by Kalinga*.—Two cases of dropsy successfully treated by the root of *kalinga* are recorded in the *Transactions Médicales* for March last, by Dr. FRANÇOIS.

54. *Cure for the Tooth-ache*.—The learned editor of our esteemed cotemporary, the *London Medical and Surgical Journal*, Dr. RYAN, recommends the nitric acid as affording immediate relief in the tooth-ache, when arising from caries. He says that he has used it in numerous cases, and invariably with success. In some instances the disease does not return for days or weeks, and in others not for months. The best mode of employing it, according to Dr. R. "is by means of lint wrapped round a probe, and moistened with the acid, which is then to be slowly applied to the cavity of the tooth; care being taken not to touch the other teeth, the gums, or the cheeks. On withdrawing the probe, and inquiring how the patient feels, the usual reply is, 'the pain is entirely gone.' The mouth is next to be washed with tepid water. The acid should be gradually applied to the whole cavity of the tooth, or otherwise a second application will be required before complete relief will be obtained.

"This remedy may be used when the gum and cheek are inflamed, so as to preclude the possibility of extraction. In cases where the diseased fang remains, and when the caries fates the adjacent tooth, it obviates the necessity of extraction in all cases of hollow teeth, which all practitioners declare to be desirable, if possible; and it enables the dentist to perform the operation of 'stopping or filling teeth,' much sooner than he can otherwise accomplish. In a word, it will alleviate a vast deal of human suffering, and supersede a most painful operation. It is not a panacea for all the diseases of the teeth and gums, though a certain and efficacious remedy for the common cause of tooth-ache. It will be a valuable remedy for children, delicate persons, and pregnant women. It does not accelerate the decay of the tooth to which it is applied."

OPHTHALMOLOGY.

55. *On the Utility of Strychnia in certain forms of Amaurosis*. By Mr. MIDDMORE, Assistant-Surgeon to the Birmingham Eye Infirmary.—It is readily admitted that the term *amaurosis* comprises a variety of pathological conditions, not only most diversified in their seat, but various in their state; for instance, an accumulation of fluid in the infundibulum, producing pressure upon the optic nerve; or an alteration of the ossific aperture through which the optic nerve passes; or an atonic state of the retina, unattended with any organic alteration; or an increased fulness of its vessels from general plethora, have all been designated by the term *amaurosis*, whenever they have led to much diminution of the power of vision; yet nothing can be more different, either as regards the seat of the mischief, or the state of the parts affected, than these several morbid conditions. It is not, however, from an intention to demonstrate the necessity of adopting a more precise and definite term, for the designation of the disease in question, that I have alluded to, what appears to be a great defect in the name generally applied to these various conditions of morbid action or altered structure, but to point out the necessity of selecting that particular state of the system, or the retina, or other part of the nervous apparatus of the eye,

leading to partial or total blindness, for the employment of a remedy which, on two former occasions, I ventured to recommend to the notice of the profession. It will be readily conceded, that on this circumstance depends the probable success or otherwise of the local application of strychnia in amaurosis; and, as I am well aware, that its use is attended with annoyance to the patient, and trouble to the surgeon, and that on this account it is not likely to be had recourse to, unless under an impression of its great value; and as the first trial, if unattended with advantage, will in some instances lead to its discontinuance, I shall trespass for a short time upon your pages, in order to impress upon the serious attention of your readers, the description of amaurotic symptoms which have been present in those subjects, in whom I have most advantageously had recourse to its assistance.

During the last six months I have received from several medical friends, a request to take under my care persons suffering from amaurosis, for the express purpose of subjecting them to a trial of the local application of strychnia, but in nearly every case they have been very unsuitable subjects; and, in some instances, it would have been highly improper to have attempted its use. The last patient I saw was one of this description; he was an attorney's clerk, who had been accustomed to write for many hours by a strong gas-light; and he remarked, (which, by the bye, is a very general observation,) that he was compelled to increase the strength of the light until the flame was eventually of a very vivid description; the strength of light with which he could see extremely well, when he first commenced the burning of gas, afforded him, after a time, little more than an indistinct perception of surrounding objects, and he was consequently compelled to increase the power of the flame, as has been mentioned; in this way he continued sometimes writing three or four, at others, six or seven hours together, by the assistance of this immoderately augmented light; by this means an attack of subacute retinitis was induced, an attack neither so rapid in its progress, nor so obviously disorganizing in its effects as the acute retinitis, nor so tardy in its course as the chronic form of this disease. I did not see this patient until his vision was nearly destroyed, when an examination of the eye, and an investigation of the history of the case, assured me that it was quite unsuited to the advantageous employment of strychnia. Had the remedy been used in this case, it is quite obvious that the patient would have suffered the inconvenience of its application, without any chance of deriving the slightest benefit; and it is by no means improbable that it might have been discarded from the good opinion of the gentlemen who had only been induced to try its powers in consequence of the recommendation of others; nothing, however, would have been more unfair than to have concluded from such a description of experience, even presuming the strychnia had been tried, that it had no influence upon the disease designated by that indefinite term, amaurosis. In nearly every instance in which I have employed the strychnia, locally, for the purpose of restoring lost, or improved impaired vision, other modes of treatment had been previously adopted, and the patients had been under the care of those, who, from my knowledge of their skill and acquirements, would treat them in the most judicious manner according to the general rules of practice in similar cases, so that I have had the great satisfaction of proving most unequivocally the decided value of the remedy in question.

If a person be suffering from loss or diminution of the power of vision from an atonic state of the retina, or other part of the nervous apparatus of the eye, or of the system generally, the local use of strychnia, (applied in the following manner,) will be, in my opinion, the most likely means of removing the defect, more especially, if it be of recent occurrence. But it will, in many instances, be found necessary to institute a most rigid examination, before deciding upon the necessity or propriety of the treatment: for instance, the history of the patient must be closely investigated, and the eye subjected to the most attentive examination, and if the result of this inquiry and examination lead to the opinion that the defect does depend on the atonic condition of one, or all the parts

to which I have just alluded, he may, with safety, be subjected to the very tedious and somewhat painful plan of treatment it remains for me to explain; but it will be readily admitted, that if this examination be not conducted in the most careful manner, it will be impossible to discriminate, with any approach to certainty, the particular conditions of the retina, and other parts of the nervous apparatus of the eye, productive of amaurosis, which admit of alleviation or removal; nor can the trial of strychnia, without such a preliminary investigation, be viewed, as otherwise than a rash and criminal procedure; a procedure which is more likely to destroy the power of vision for ever, than to yield any prospect of relief. Having pointed out that condition of the retina, or other parts of the nervous apparatus of the eye, or of the system, (which I have termed atonic,) capable of being relieved by the local application of strychnia, it may be thought right to complete the treatment, it may be frequently necessary to combine with this local remedy; but as my object is merely to recommend the employment of the more important remedy; and as the various tonics and stimulants, which it may often be advisable to use at the same time can be readily adapted to the circumstances of individual cases; and as they form but a very secondary and subordinate part of the treatment, I shall not extend my observations, nor trespass upon your pages to attempt the supply of this trivial deficiency.

The following case not only illustrates the mode of using the strychnia, but explains the condition of retina producing amaurosis, which has appeared to me likely to be benefited by its use, unless, indeed, it be admitted, that a suspension of its action for a long period, induces some alteration of structure, not indicated by constitutional symptoms, nor evidenced by local changes, by which it is permanently unfitted to receive and obey the stimulus of light. A few years ago, I attended a Miss P. of this town, who had, many years since, been operated upon for cataract, by the late Mr. Saunders; she was about nine years old at the time of the operation, which was very well performed, if we may judge from the appearance of the eyes, which do not present any traces of inflammatory mischief, and are only to be distinguished from perfectly healthy organs by the large size of the pupil, a rotatory motion of the eyeball, and a small remnant of capsule at the side of the pupil, this girl is highly intelligent, and in a moderately good state of health, and, with the exception of the defects just mentioned, her eyes are perfectly natural and healthy in appearance, and yet she has never been able to distinguish the form, colour, or magnitude of surrounding objects, having merely a perception of light, and a capacity to distinguish its degrees, when varied from an extremely feeble to a very brilliant light; a power which she possessed, though to a less extent, prior to the performance of an operation. Considering the defect of vision to have arisen in consequence of permitting the retina to remain for so many years unimpressed by its natural stimulus, and that by exciting its sensibility, it might still be rendered obedient to the stimulus of light, I employed the strychnia in the following manner:—having placed a blister over each eyebrow, and afterwards cut away the raised cuticle, so as to expose an extensive surface, which would be likely to prevent the frequent necessity of re-blistering the part, I sprinkled the strychnia equally upon the whole of the surface, commencing with the sixth of a grain upon each, and gradually augmenting the quantity until I was enabled to use a grain upon each side, at which time she had occasionally a much increased perception of light, with frequent scintillations; but, unfortunately, the remedy began to affect the head, producing so much uneasiness and nervous disturbance that I did not judge it prudent to persevere in its use any longer, much less to increase the quantity, to that extent, which, in my opinion, was indispensable to success. In the course of the treatment, I was pleased to hear this patient complain of the sensation of scintillation, as, on former occasions, that symptom had been frequently followed by the most satisfactory result; and although in this instance I was unable to persevere as I could have wished, in consequence of the extreme head-ache and other symptoms, yet it is still hoped, that on

some future occasion, she may be enabled to bear the requisite treatment, without a recurrence of these untoward symptoms.

There is one other circumstance which was remarked in this case, and which appears to me worthy of recording; when the blistered surface had healed in its circumference, I was compelled to place nearly the whole of the strychnia upon a very small space, indeed, a great part of it was dusted upon, and immediately around the situation of the supra-orbitary nerve; and it was observed that the remedy acted with greater advantage, than when placed upon a larger extent of surface. It immediately occurred to me that the nervous connexion subsisting between this branch and the nervous supply of the iris, afforded a satisfactory explanation of the circumstance. Acting upon this impression, I repeated this mode of application upon a patient soon afterwards, and instead of applying a long narrow blister over the whole eye-brow, and partly upon the temple, as on former occasions, I directed the lower border of the blistering plaster to be placed, as nearly as possible in, and just above the situation of the supra-orbitary notch, desiring that it might not extend beyond the outer edge of the eye-brow, and, in this case also, the advantage of limiting the application of the remedy was equally evident. As, however, the quantity it may be necessary to use, in order to produce the desired effect, will in some patients be considerable, and, as we cannot calculate upon the absorption of a thick layer of powder, with the requisite degree of rapidity, it will often be advisable to scatter it more extensively; bearing in mind, of course, that only as much of the strychnia must be placed in the situation we have considered to be that in which it acts most efficiently, as can be absorbed within the time allotted for a second application.

If, in the case of Miss P. the use of strychnia had been commenced soon after the failure of the operation of solution had occurred, there would have been every prospect of the recovery of a much greater degree of vision than she at present enjoys; but, as the retina had remained in an unexcited state for so many years, it was not probable that any treatment would restore its power, and it was only after an explanation to this effect; after having explained the very little chance of success the application of the strychnia afforded, in consequence of the long duration of blindness, that I consented to adopt the treatment she was desirous of undergoing.

The following brief directions will include all that I have hitherto found necessary to insure the full action of this remedy: place a narrow blister over each eye-brow, which must not extend beyond a line drawn upwards from the external canthus: when it has risen sufficiently, cut away all the cuticle and apply, for half an hour, a piece of linen to absorb the serum, which is apt to be discharged in large quantities for a short time after the removal of a blister, then dust the remedy chiefly in the situation of the supra-orbitary nerve, but not so thickly as to prevent the entire absorption of the whole layer of the powder, at the time of the second dressing, which should be, as nearly as possible, twenty-four hours afterwards; twenty-four hours between each dressing is a proper and necessary interval; cover the blistered surface with a piece of linen very thinly spread with ung. cetacei, for, if much greasy matter be mixed with the powder, it is less easily and quickly absorbed; but, unless a little be applied, the linen adheres to the wound and occasions great pain in its removal. Increase the dose of strychnia very gradually until the state of vision is improved, or symptoms indicative of the injurious agency of the remedy occur. If there be much local pain excited by the application of the strychnia, dilute it with flour, or mix it with opium; and if that do not succeed, suspend its employment until the stomach and bowels be improved by a plan of treatment instituted expressly for their benefit, and then resume its use; if severe pain in the head, convulsive muscular twitchings, great general nervous excitement, or other symptoms, denoting the injurious agency of the strychnia upon the constitution supervene, and the condition of vision be not improved, it must be discontinued altogether; as it would appear probable that in such case it was

not likely to exert a favourable influence upon the disease, at the same time, that from some peculiarity of constitution, it was calculated to do important general mischief.

The case of Miss P. is one, amongst others, which have fallen under my notice, strongly illustrating the propriety of the recommendation of the late Mr. Saunders, with regard to the early performance of an operation for the removal of congenital cataract. As it is impossible to conceive a greater argument in support of the opinions of that amiable man and excellent surgeon, upon this subject, than the remarks of Dr. Farre on the success of his (Mr. Saunder's) operations, performed upon children at various ages, I shall beg leave to make the following brief extract from them. The sensibility of the retina "in many of the cases cured at the ages of four years and under, could not be suppressed in children who had enjoyed vision from birth; but at eight years, and even earlier, the sense was evidently less active; at twelve it was still more dull; and from the age of fifteen and upwards, it was generally very imperfect, and sometimes the mere perception of light remained."

On account of this disposition of the retina to remain in a permanent condition of inaction, when unaccustomed for a long time to the influence of its natural stimulus, it has been recommended on high authority, to remove a cataract from one eye, when fully formed, when its fellow is perfectly healthy; apparently forgetting that the retina of an eye so circumstanced, is by no means in the same unexcited state as that nervous expansion in the eyes of a patient affected with congenital cataract. For, if one eye only be affected with cataract, (not congenital,) the other eye remaining perfectly healthy, the action of light upon the retina of the sound organ, will produce a sympathetic impression to a certain extent, upon the other, and thus preserve its susceptibility, though in a diminished degree; whereas, in the case of congenital cataract affecting both eyes, the retina has never been fully and perfectly impressed with the stimulus of light, and its susceptibility gradually diminished on the one hand, whilst its stimulus declines on the other; the declension of stimulus arising from the increasing density and opacity of the cataract, and the diminution of susceptibility being dependant on the inactive state of the retina, increased by the gradually diminishing quantity of light transmitted through the humours of the eye, from the cause to which we have just adverted.

It has been said that, if a mature cataract be allowed to remain in one eye, it disposes that organ to become amaurotic, and has a tendency to excite a similar disease in its fellow; and whilst it limits the sphere of vision, it weakens the opposite organ by the undivided labour it obliges it to sustain. As I have never had the slightest reason to believe that an opaque condition of one lens, possesses in itself any capability of exciting a similar state in the lens of the opposite eye, and as my attention has been particularly directed to the investigation and elucidation of this circumstance, I must refuse my assent to this doctrine, until future observation has increased our knowledge upon this point.

With regard to the other objections, I will merely observe, that whenever one eye only has been affected with cataract, which has not been congenital, nor produced by accident, the vision of that eye has been generally restored by an operation, however long the cataract may have existed; or, rather, the retina has, after such operation, indicated its capacity to be properly excited by its natural stimulus. Of course I am presuming that the operation has been judiciously adopted and properly performed, and that no effects injurious or destructive to vision, have been produced by the operation. If congenital cataracts had been permitted to exist for the same number of years, as in the cases now referred to (though not detailed,) from my notes, and which have furnished me with the data for my present opinions, the degree of success consequent on the performance of an operation for their removal, would have been much less considerable, and, in many instances, judging from the result of operations undertaken for the cure of congenital cataracts, upon patients at the age of ten and upwards, no vision whatever would have been restored.

From these remarks, and from opinions formed after the maturest deliberation, I would deduce the following conclusions; and 1st, that although the retina in the case of congenital cataract affecting both eyes, is likely to remain in a permanently atonic state, if the opaque lens be not removed at an early period of life, yet the same condition of retina is not likely to be produced by the existence of cataract in one eye, for an equal number of years. 2nd, that experience does not warrant a belief, that the existence of an opaque lens in one eye, has a tendency to excite a similar disease in the opposite organ. 3rd, that so long as the sight of one eye remains perfect, the field of vision is sufficiently extensive for every useful purpose; and lastly, that in many persons who have lost the power of vision with one eye, the sight of the remaining eye has continued with the same, or nearly the same, degree of vigour, as under ordinary circumstances.—*Midland Medical and Surgical Reporter, May and August, 1831.*

56. *On the efficacy of the Nitrate of Silver Ointment in leucoma, and dense opacity of the cornea.* By MR. MIDDLEMORE.—Sometimes the cornea may be the seat of leucoma, which may or may not be combined with synechia anterior; and if this leucomatous state of the cornea be very extensive, or unusually dense, the power of vision will be very generally limited to an indistinct perception of light, and, in other instances, vision will be totally destroyed. In such cases, the iris will be frequently uninjured, and the deep-seated textures unimpaired, and the retina quite capable of performing its proper function, if the opaque condition of the cornea did not prevent the transmission of light. It is, therefore, a point of the utmost importance, to remove this opaque state of the cornea with as much speed as possible; but, in many of these cases, the oxymuriatic drops, and the various stimulants usually employed for this purpose, either fail to remove it altogether, or do so only partially, after the lapse of a very long period. In these instances, I have witnessed the most surprising results, from the application of the nitrate of silver ointment, used daily, or every other day, according to the effect it produces. Many persons, who had relinquished all hope of recovering any useful degree of vision, and who, according to the ordinary mode of treatment, would scarcely, under the most favourable circumstances, have discovered any increase of vision, after one or two years attendance, have been partially restored to sight in as many months; and in the space of five or six months, the leucoma has entirely disappeared, except at that point where the ulceration of the cornea, producing the leucoma, had extended through the whole, or nearly the whole, of its layers.

If this leucomatous condition of the cornea, or a state of simple opacity of the cornea, (always presuming that the corneal opacity be very extensive, and of considerable density,) be connected with an enlargement of vessels, which enlargement may be confined to its conjunctival covering, or may form the ostensible vascular organization of the substance constituting the opacity or leucoma, and may be therefore more deeply situated; the same mode of treatment is equally applicable, and will be equally successful. When either of these states of the cornea occurs as the result of purulent ophthalmia, the chances of success will be still greater, on account of the comparatively short period which has elapsed since the new substance, constituting the opacity, has been deposited and organized, and the greater activity of absorption at that early period of life.—*Midland Med. and Surg. Reporter, August, 1831.*

57. *Pannus.*—In our department of *Materia Medica*, we have given the formula for the preparation of nitrate of silver ointment; that ointment Mr. MIDDLEMORE recommends in various affections of the eyes, and among others, he states that it is calculated to render the most important service in that thickened, opaque, and vascular state of the conjunctival lining of the eye, usually termed pannus. This condition of the mucous covering of the cornea, is frequently combined

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with, and produced by, a vascular and granular, or, (what is more infrequent,) a cutaneous state of the palpebral conjunctiva; but, whether this condition of the palpebral conjunctiva be present or otherwise, whether the mucous covering of the cornea be merely thickened and rendered opaque, or, in addition to this thickened and opaque state be also vascular, Mr. M. says that the use of the nitrate of silver ointment is equally called for, and promises the most speedy and material relief. Of course it would be desirable to cure any defect requiring operation for its removal, which appeared to be maintaining and increasing this morbid condition of the cornea, before having recourse to the ointment; for instance, there may be an incurvation of the tarsal cartilage, an irregularity in the growth of one or more of the eye-lashes, or an inversion of the whole of the eye-lashes, from their unnatural position at the *inner* border of the tarsal margin, which having produced the alteration in the translucency of the cornea, to which I am now adverting, it would be advisable, indeed, indispensably requisite, to remove, as a preliminary measure to the adoption of any curative plan of treatment whatever. But the mere removal of this defective condition of the tarsal cartilage, the integuments of the eye-lids, or the direction of the eye-lashes, will not be sufficient to restore the translucency of the cornea; and it is with a view of curing the effects any one of these conditions may have produced, and which the mere removal of the cause which produced them, will not accomplish, that the present plan of treatment is proposed.—*Ibid.*

58. *Chloruret of Lime in Purulent Ophthalmia.*—We have already noticed, Vol. I. p. 459, the chloride of lime having been successfully employed by Dr. Varlez of Brussels, and Mr. Guthrie of London, in the treatment of purulent ophthalmia. In a late number of the *Journ. Comp. des Sc. Med.* Dr. HERZBERG relates four cases, in which he employed this remedy with advantage.

We have ourselves employed it in a few cases, but without the striking benefits we were led to expect from the representations of others. It will require further experience to determine its real value.

SURGERY.

59. *Excision of Scirrhus Rectum.*—Mr. LISFRANC has excised the lower extremity of the rectum in nine cases, of which six were successful, for the removal of what is termed by French surgeons, cancer. The peritoneum descends along the front of the rectum to six inches from its extremity in women, to four inches from the same in man. By means of an ovoid incision in the skin around the anus, the rectum can readily be drawn out behind, and any kind of instrument may be applied to it; there exists a second sphincter above the first. M. Lisfranc has removed as much as three inches and a half of the rectum, and he recommends the operation whenever the forefinger can reach beyond the upper margin of the disease, and when the cellular texture, external to the gut is sound. The operator must bear in mind that the antero-posterior diameter of the perinaeum is generally one inch, the distance of the anus from the coccyx eighteen lines, and that between the anus and the base of the same bone two inches, that considerable portions of the rectum may be removed laterally and posteriorly without wounding the vagina in woman, or the urethra in man; and finally, that hemorrhage may always be arrested by pressure or by ligatures. In the performance of the operation the patient is to be placed as in the lateral operation for lithotomy—two semilunar incisions are to be made around the anus—and the rectum to be insulated in its inferior extremity, drawn down by the forefinger introduced into its cavity, and cut off by means of scissors. After the cure, the faeces are sometimes voided in the usual manner, sometimes a *bouffet* is formed internally, and takes the place of the sphincter, sometimes

there is incontinence of liquid fæces, and sometimes the patient is obliged to stuff the rectum with lint.—*Med. Chirurg. Review*, July, 1831.

60. *Extirpation of Cancer of the Rectum*.—M. MAURIN also has performed this operation successfully on a patient, at the Hospital of Versailles. The patient was a man thirty-one years of age, of delicate constitution, who presented himself to M. Maurin in the beginning of September, 1828, complaining that he could not procure a stool, except by the aid of enemata; and that he felt great weight and acute pains in the rectum. On examination by the finger, a hard and irregular tumour was discovered, about two inches from the anus, ulcerated in the centre, and discharging a sanious ichor, of a most intolerable fetor. The mobility of the tumour, notwithstanding its distance from the orifice of the gut, induced the surgeon to entertain the idea of extirpation. Baron Dupuytren was consulted on the 17th of September, and made the following note: "There exists about two inches from the orifice of the rectum a carcinomatous tumour, occupying one side of the gut, to the extent of about two inches. There is no chance of a cure, except by an operation—and this operation must be both difficult and dangerous. If the patient shall make up his mind to the risk of the operation, I am ready to attempt it." *Sept. 21st*. Encouraged by this opinion of so celebrated a surgeon, M. Maurin himself determined to operate. For this purpose he made an incision through the posterior and left part of the sphincter, by means of a probe-pointed bistoury, when the tumour was seized by a kind of tenaculum, and drawn downwards gradually and gently, till it appeared in view, when it was carefully removed by means of scissors. When taken out, it was found to be of an oval form, a little flattened, and two inches in length, with an ulceration on one side. It was of a very compact tissue. The operation was very painful, and considerable hæmorrhage attended, but was soon arrested by stuffing the rectum. In the course of five hours after the operation the patient experienced acute pains in the epigastrium, with dysury, sharp fever, and intense thirst. Two bleedings relieved these symptoms, and he slept some in the course of the night. In the morning the pulse was reduced from 140 to 100, and the patient was again bled. When the dressings were removed, there issued a considerable quantity of pus with blood. In the course of the succeeding days the state of the patient was improved—the purulent discharge lessened—the lancinating pains ceased, and, by the 15th of November, the discharge was almost nothing. Consistent and spontaneous stools were passed. On the 1st of December the wound in the sphincter was found to be cicatrized. On the 8th of the same month, the patient was discharged from the hospital cured. He experienced no difficulty or pain in passing his motions.—*Ibid*, *Revue Medicale*, Feb. 1831.

61. *Excision of Uleer of the Rectum*.—This operation has been performed by Mr. Mayo, at the Middlesex Hospital. The patient was a female, thirty-eight years of age, who, for two years previously had experienced pain in the rectum, when the bowels were evacuated. This increased in severity, and was attended by unpleasant sensations about the loins, &c. and some sanguineous discharge. In December, 1830, she entered the Middlesex, labouring under severe pains in the rectum, with the occasional issue of pus and blood.

On examination of the rectum, it was found to be indurated and ulcerated to the extent of two inches; but the finger could be passed beyond the diseased part into a healthy gut. Various remedies were tried, but in vain. Mr. Mayo then determined on an operation.

"The operation was performed on the 25th of February, in the following manner:—the patient was laid upon her side, with the hips and knees bent. The fingers being then introduced into the rectum, the knife was plunged into the perinæum, on one side of the bowel, and, an incision of some depth being thus made laterally, the dissection was continued forwards from thence, so as to separate the vagina from the rectum. The dissection was then continued

entirely round the rectum, including half an inch of integument, with the sphincter muscle. By this means, a length of two inches and a half of the extremity of the rectum was separated from the adjacent parts: it was then cut off with scissors from the sound rectum above. The operation was performed slowly, and the vessels, about nine in number, were tied as they were divided. The patient lost about twelve or fourteen ounces of blood."

In about two hours after the operation, and when the smarting of the wound had subsided, she observed that she found herself entirely relieved from the pain and distress to which she had been subject for so many months. The appearance of the wound is singular. The extremity of the bowel is not more than half an inch from the cut edge of the skin, and the intervening granulations are healthy and rapidly cicatrizing. The bowels act regularly once a day; and the patient is aware of the presence of the fæces in the rectum. In about five minutes after this sensation is perceived, the bowels act much in the usual manner, though it is evident that there can be nothing at present equivalent to a sphincter muscle. A hope is entertained that when the wound is cicatrized and contracted, the patient will have some power of retaining solid fæces.—*London Med. and Phys. Journal, April, 1831.*

It is stated in a subsequent No. of the Journal, (that for June,) from which we take the report of this case, that the general health of the woman was improved, and the sufferings she experienced from the disease entirely removed by the operation. She can even *perfectly retain* her fæces. As might be expected, however, when she is under the influence of purgative medicine, the contents of the bowels are discharged rather quickly: but it seems far from impossible that, in time the firm cicatrix at the wound, assisted by the action of the muscular fibres of the bowel itself, will form a sufficient substitute, on all occasions, for the sphincter muscle, which has been removed.

62. *Amputation of the Thigh at the Hip-Joint.*—In the *Glasgow Medical Journal* for August last, a case of this, terminating successfully, is related by Dr. CHARLES BRUCE. The subject of the case was a Greek soldier, twenty-three years of age, who was wounded by a six pound ball, at the battle of Athens, on the 6th of May, 1827. The ball struck the posterior and lateral part of the left thigh, immediately below the trochanter. The integuments and muscles of the hip and thigh were very extensively torn and removed. The trochanter, neck and four inches of femur were broken into minute pieces, but the femoral vessels were untouched, and the mass of flesh on the inside, formed by the adductors, vastus internus, and gracilis, was uninjured. The person complained much of pain, from the distortion of limb, but suffered little from weakness or depression. The bleeding from the wound was inconsiderable. Some wine being given him, and the leg disposed as favourably as circumstances would permit, he was conveyed on board an hospital ship. Upon examining the limb, in reference to an operation, the gentlemen assisting coincided in opinion, that amputation was authorized under the most favourable circumstances, and that, in our actual state of disturbance and movements, any delay of operation was quite inadmissible. The plan of proceeding was readily determined on, and executed without difficulty, in the following manner:—Firm pressure being made by the cross-piece of the screw of a tourniquet and a pad on the external iliac, immediately above Poupert's ligament, a convex incision was made across the highest part of the thigh and hip, passing from the inside of the sulcus of the blood-vessels, to an inch and a half behind the trochanter, including in this convexity and extent the torn superior circumference of the wound, and exposing the capsular ligament of the joint.

The femoral artery was now secured above the branching off of the circumflex and profunda. The capsule and round ligament were next divided, the acetabulum exposed, and the head of bone drawn out. The amputating knife was again taken, and, observing the particular shape of the upper incision, a corresponding flap was formed, by a double stroke of the knife, from the inner

and under part of the thigh, in which the fractured portions of the bone, and the contused and lacerated soft parts were included. The arteries were now secured, and the wound cleared of blood. Notwithstanding frequent ablutions of the wound with cold water, there existed a troublesome oozing of blood, without our being able to detect its sources, by which, and the fatigue of the operation, the patient became exhausted. Wine and assuring language restored him somewhat. It was evidently dangerous to dress the wound immediately; and leaving, therefore, its surface uncovered, exposed to the air, (a method frequently had recourse to in other similar cases,) we proceeded to another amputation. By this management the wound became so dry, after a few minutes, as to allow the operation to be satisfactorily finished. The flap covered very well the face of the wound, and was easily retained in proper contact by strips of adhesive plaster. The common dressings were applied, and a double-headed roller was carefully adapted to the peculiar form of the hip. An anodyne was exhibited, and six hours after the operation he was composed, and had slept; no pain nor bleeding from the wound.

The irregular movements of the army and navy, in consequence of the melancholy event of this battle, forced Dr. B.'s attendance elsewhere, and prevented him seeing the patient before the fourth day of the operation, when he found him conveyed to Poros, truly well, considering the many privations and hardships the poor fellow had undergone during the preceding days. The edges of the wound, though irritated, showed no disposition to separate, nor was the flap tense or swollen. The general system suffered from febrile feelings, anxiety, and restlessness, but the disturbance was not greater than the irregular and neglected state of his bowels, and the irritation in the stump could account for. Upon the whole, Dr. B. was agreeably disappointed in his expectations of his condition; and entertained sanguine hopes of his recovery, more especially that some arrangement had been made to ensure professional attendance on the wounded. During two days Dr. B. was at Poros, the patient recovered from every untoward symptom, and the wound was dressed and looked well. When Dr. B. returned to this place, after six weeks, he was delighted to see his patient completely cured and healthy.

63. *Lithotriety*.—M. SEGALAS has communicated to the Royal Academy of Medicine, the case of a man, forty-five years of age, who, for the relief of dyspepsia, caused by mental and physical fatigue, was restricted to a vegetable diet, consisting in great part of sorrel. Two paroxysms of violent nephritic colic soon supervened, and frequent hematuria. A urinary calculus was detected by the lithonriptor, and it was removed at a single operation. Chemical examination showed it to consist of oxalate of lime. M. Segalas offers two remarks in relation to this case: 1st, that the calculus, which could not be detected in two examinations with the sound, was afterwards detected with the lithonriptor; 2d, that lithotriety has here cured a patient in a single sitting, who was too nervous to submit to lithotomy.—*Archives Générales*, May, 1831.

64. *Lacerated wound of the Perinæum, with fracture of the bones of the Pelvis—Recovery*.—The following case related by GEORGE C. RANKIN, Esq. in a recent number of the *London Medical Gazette*, affords an interesting example of the powers of nature. A farmer of Upper Canada was crossing a narrow dam, "when meeting a loaded cart he unfortunately locked his wheel, and in backing to extricate himself lost his balance and fell out of the cart over the dam; the horse continuing to back went over also, with the cart, and was killed on the spot. The dam was about 30 feet high, and the cart fell over the man. The first sight showed a part of the sphincter ani, the whole perinæum and scrotum, torn away, in the form of a triangle, the apex of which was at the anus, and lying over the penis on the abdomen, leaving the testes perfectly denuded, and suspended like two eggs. How, under such circumstances, they escaped entire destruction, I cannot conceive. On a nearer inspection, I found the subja-

cent soft parts in a dreadful state of laceration, a part of the ramus of the ischium gone, and the ischium itself fractured between its tuberosity and the acetabulum; the left crus of the penis and urethra divided; and, on passing my fingers under the testes, removed several portions of the os pubis, which were apparently chipped off as if by some sharp instrument, and which, as well as a large portion of the ramus, I have preserved. In addition to the above, the right arm was so completely shattered, that I was under the necessity of amputating it some days after, not with any hope of ultimate recovery, but merely to relieve the patient from the pain which the splintered bones occasioned.

“Looking upon this as a desperate case, I merely replaced the parts *in situ*, ordered poultices to be constantly applied, and the patient to be kept as quiet as possible. In this state he continued, labouring under the greatest excitement, until the 26th, about the tenth day after the accident, when I perceived that the injured soft parts had entirely sloughed off, the stump still continuing a good deal swollen. On the 28th, that state of collapse consequent on too great excitement, and which I had looked forward to as the event which was to put an end to his sufferings, was strikingly depicted on his cadaverous countenance; the stump was flaccid, and the wounds put on a languid appearance. I ordered wine to be given freely, and had the unexpected pleasure of seeing him something better on the 30th, and complaining of the pain occasioned by the pointed bones. Removed such parts of the ramus as I could get at with the bone-nippers, and succeeded in extracting two or three small splinters of the pubes, which had caused much irritation. From this time he appeared evidently to improve; the stump, as well as the wound, soon began to show a secretion of healthy pus. At the end of a month from the amputation the stump was quite healed, and in another fortnight the injured bones of the pelvis had completely exfoliated, and healthy granulations were fast filling up the frightful void which had been made in the soft parts; and in the beginning of March (1830,) instead of my visiting him as formerly, he came to me as long as the snow lasted, in a sledge; his long confinement in the recumbent posture, having afforded ample time for the tuberosity of the ischium to reunite to the body of the bone, so that he could very soon sit up without much inconvenience.

“The only thing further to be done for him was to endeavour to reëstablish the natural passage for the urine, instead of allowing it to continue to pass by the perinæum. This I attempted, and though unsuccessful, am still perfectly convinced of its practicability. After introducing the catheter, and irritating the edges of the wound, adhesive plaster was applied, and I feel confident would, in forty-eight hours, have secured a union by the first intention, had it been allowed to remain; but, to my great disappointment, I found next day that the catheter had been removed by some officious friend, and I could not prevail on him again to permit its introduction. I would not be surprised, however, to hear that nature had ere this done for him what he would not permit to be done by art; for when I last saw him, in August, 1830, he informed me that when he opposed any obstacle, as the end of his finger, to the passage of the water by the perinæum, it readily passed through the urethra.

“During the whole course of this case, the only prescriptions used were peccoral mixtures, to relieve a very troublesome and irritating cough, and an occasional aperient; and after the discontinuance of the poultices, the cerat. calamin. with lotions of sulph. zin. and an occasional touch of nit. argent., to keep down luxuriant granulations, were the only local applications found necessary.

“Of all the cases which fall into the hands of the practitioner in surgery for treatment, there are perhaps none from which he may obtain more credit to himself, in great measure at the expense of nature, than in extensive lacerated wounds; the alarm which any loss of substance invariably excites amongst the ignorant in surgery naturally inclining the patient to bestow all the credit upon his attendant, which the surgeon himself is content, in his own mind, to divide with nature.

"I am not aware of there being any case on record, accompanied with so many discouraging circumstances as the above, in which the patient has recovered; and the only object in view in preserving it, (as such cases are fortunately of rare occurrence,) is to afford another proof of the almost entire dependence to be placed, under such circumstances, in the *vis medicatrix naturæ*."

65. *Traumatic Tetanus*.—The following cases of tetanus reported in the *Glasgow Medical Journal* for February last, by ROBERT PERRY, M. D. senior surgeon to the Glasgow Royal Infirmary are interesting from some of the appearances noticed on dissection.

Case I. Patrick Vallily, ætat. 15. 17th April, 1830. A few hours ago, while sitting near the funnel of a steam-boat engine, the boiler exploded, and he was lifted into the air. Both legs and posterior part of left thigh are extensively vesicated, both arms and shoulders slightly so, occasioned by the hot water thrown on him. Pulse quick and feeble, has had no vomiting. Sumat. stat. tinct. opii. gtt. xl.

18th, Occasional vomiting; in other respects easy. Hab. opii. gr. i. vesp.

19th, Seems confused, but no return of vomiting; complains only of pains of abdomen, which is slightly tender on pressure. Tongue white and moist; pulse 100; bowels open. Cont. opii. gr. i. vesp. Adhibeant. abdomeni, hirud. xii.

20th, A rigor this morning; half an hour after was bled to 9 oz. Blood first cup buffy. Complains of slight pain of abdomen on motion, but there is no tenderness on pressure. Pulse 100; tongue white; thirst; bowels slow. Rep. infus. sennæ c. sulph. magnes.; Vesp. rep. venesect.

21st, Bled to six ounces. Pulse 120; tongue less white; bowels open. Feels much easier.

26th, Since last bleeding has continued much easier. Pulse has fallen in frequency, and tongue cleaning.

29th, Convalescent till 27th, when complained of pain in abdomen; not increased on pressure; had an opiate, which was repeated last night; to-day was found lying on his back, head retracted, and muscles of the head and trunk rigid; countenance anxious, and features retracted. Slight difficulty on deglutition, but can open his mouth pretty freely. Pulse 105; tongue whitish at edges, brownish and dry in centre. Sum. st. calom. ʒi. et post hor. tres infus. sennæ donec plen. deject. alv.; Post. sol. alvi hab. enem. c. tinct. opii. ʒi.; Spin. applic. vesicat.

30th, Physic operated well, and in the evening less permanent rigidity of the muscles, but the accumulation of phlegm in trachea most annoying. Spasms increase in frequency. Complains of pain in the region of the heart. Pulse 124; tongue brown and dry in centre. Sum. 3tia q. q. h. calom. gr. x. c. opii gr. iss.; Curet. pars vesicat. ungt. sabinæ.

May 1st, It was at this date the patient came under my care. Since last report the spasms of the muscles of the trunk have become more severe and permanent; less able to open his mouth, severe pain at epigastrium, no stool for the last 24 hours, has continued the calomel. To have powdered opium sprinkled on the vesicated portions of legs.

2d, Thirst urgent. Tongue dry; pulse 110. R. Ol. croton. gtt. iii. pulv. sacc. gr. vi. M. et divid. in d. iii. Sum 1 3tia q. q. b. Applic. catap. com. vesicationibus. Omit. p. opii.

3d, Has had several dark stools from the croton oil; tension, and pain of abdomen, diminished, but spasms still continue. Pulse in the morning feeble, but become stronger since taking a little wine. 4 P. M. Pulse sunk considerably; in consequence of which, 4 oz. of spirit were ordered to be taken in divided doses with warm water and sugar. Spasms continued till 5 next morning, when he died. The body was immediately placed with the face to the floor.

Inspection 24 hours after death. The whole spinous processes and calvarium were removed, the brain and thecæ vertebrarum fully exposed. There was a little serous fluid at the base of the brain, betwixt the tunica arachnoidea and

pia mater. The brain was considerably more vascular than usual, and on the posterior part of both lobes of the cerebellum there existed an ecchymosed appearance, which could easily be removed by raising the pia mater. The medulla spinalis had a perfectly healthy appearance, but a considerable quantity of partly fluid, partly coagulated blood, existed betwixt the theca and the vertebrae. The vesicated surfaces occupied the lower half of the left leg, and the outer and lower half of the right leg. Both had a green sloughy aspect, and the cellular substances was much inflamed. The veins did not appear more vascular than natural, and the arteries appeared healthy. The nerves were also carefully examined; the cutaneous of both legs, particularly the communicans tibialis and the communicating branches of the peroneal nerve with the tibialis communis, were inflamed at the seat of the injury; tracing them upwards above this point they were perfectly healthy, except that portion of the peroneal which turns over the head of the fibula, there it was again distinctly very vascular, thus leaving an intermediate portion perfectly free from the appearances of inflammation. The vascularity appeared to be confined to the sheath of each nerve; the deep-seated branches appeared to be quite natural. No other morbid appearances were detected.

Case II. William Fleming, ætat. 17. 22d July, 1830. Eight days ago, the ring and middle fingers of the right hand were drawn in betwixt two toothed wheels, and the integuments much lacerated; the last phalanx of the middle finger was completely crushed, and separated from the second, except at its fore parts, where a small slip of skin kept it adherent; this was removed shortly after the accident, and the fingers dressed at first with adhesive straps, the day before admission had poultices applied. Last night began to experience severe pain in fingers, which, before yesterday, had been tolerably easy; at the same time, was seized with tetanic symptoms, of stiffness of the muscles of the neck and lower jaw, and pain at epigastrium.

On admission to-day, at 2 P. M. the symptoms above related, somewhat aggravated, but did not prevent him walking up to the hospital; there is at present slight rigidity of the sterno-mastoid muscles, deglutition easy. The second and last phalanges of the injured fingers are completely gangrenous, and the integuments separated from the first, exposing the bone, of a black colour. Has severe pain in bruised fingers, very much increased on the slightest pressure; pain does not stretch up arm. The bones of the second phalanx of both fingers are fractured; the fore and little fingers are uninjured. Bowels are easy. Had 12 grains of calomel immediately on admission, and 14 leeches applied to the nape of the neck, and at 6 P. M. both bruised fingers were removed. The middle finger was taken off at its junction with the metacarpal bone, and the two last phalanges of the ring finger. Torsion of the arteries was used in place of ligatures, to stop the hæmorrhage, (a practice I have always adopted in amputations of the fingers and toes) during the operation, of which he complained much; had distinct opisthotonos. The calomel not having operated, was ordered sulph. magnes. $\mathfrak{ss}$. tart. ant. $\frac{1}{4}$ gr., o. h.

23d, The salts and tartar emetic were continued every hour during the night. Bowels have been freely opened; vomited occasionally. Muscles of the back and belly have become rigid, and at times distinct opisthotonos occurs; is unable to open his jaws so far as to put out his tongue, the attempt to do so generally brings on general spasms. Complains much of pain of right breast. Pulse 140, full and soft; skin moist; slight head-ache; makes water freely; has some difficulty in swallowing. *Cont. tart. antimon. gr. $\frac{1}{4}$ tantum. o. h. Omitt. sulph. magnes. Hab. acetat. morph. gr. $\frac{1}{2}$ o. h.; Fricct. pect., c. tinct. opii, et sap., et colli nuch. app. vesicat.*

10 P. M. Spasms less frequent, but more severe; can open mouth better; has had no stool since visit at 1 P. M.; has taken regularly the quantity of morphia and tartar emetic prescribed; feels drowsy, and has vomited a little. Pulse 160, full, and rather hard; water has been drawn off by catheter. *Repet. sulph. magnes. et tart. antimon. ut antea.*

24th, Died this morning at 7, the spasms continuing both frequent and severe.

Inspection, 24 hours after death. The body was allowed to lie the usual way on the back till the time of inspection. The calvarium and spinous ridges were removed, fully exposing the theca vertebrarum, down to the cauda equina; there was no effusion on the brain or its membranes, and its substance was natural throughout. No effusion existed between the theca and the vertebræ; the theca was healthy, and betwixt it and the spinal cord was a preternatural quantity of serum. The cord itself was of a pale colour. The nerves on each side of the remaining phalanx of the ring finger were very vascular. On tracing upwards the ulnar nerve from this point to the elbow, it was of its natural colour, but here again it became very vascular for about the extent of 2 inches. In the axilla it again presented a similar appearance as at the elbow, the portion of it intervening betwixt these two points being healthy. Tracing the median nerve in the same way as the ulnar, it was found perfectly natural, from its digital branch, which supplied the radial side of the ring finger, (and which, as stated above, was much inflamed,) till about the middle of the arm, when it again presented an inflamed appearance for the extent of $1\frac{1}{2}$ inch. The portion of it intervening betwixt this part and that confined to the axilla, where it again became vascular, was natural. This vascularity throughout, was not confined to the sheaths of the nerves, but occupied their substance; the radial and superficial nerves of the arm, along with its veins and arteries, were perfectly natural; the lumbar nerves were unaffected; the œsophagus was examined, and found healthy; the trachea appeared inflamed, and contained a large quantity of greenish coloured mucus; the other thoracic viscera and digestive organs natural.

The plan of treatment followed in the above cases may be considered as purely empirical, indeed, the treatment of this disease may be said to have been hitherto uniformly so, and must continue so while the seat and nature of the disease is unknown, as remarked by Mr. Cooper, in his excellent *Surgical Dictionary*,—"Nothing is a more certain proof of our not being acquainted with any very effectual method of treating a disease, than a multiplicity of remedies, which are as opposite as possible in their effects." To give even a summary of the remedies employed, and the plans of treatment strongly recommended, would occupy too large a space, and be of little use, from all of them being founded upon conjecture. Although the morbid appearances in the two inspections related correspond very closely, it would perhaps be rash to found upon them (until confirmed by other cases) any certain plan of treatment; yet, I think I would be warranted in treating any case of the kind which might occur, as a local inflammation of the nerves leading from the seat of the injury, the interruption of the suppurative process in the wound being one of the first appearances. When the tetanic symptoms arise from fracture of any of the fingers or toes, or even compound or comminuted fracture of the larger extremities, we might be warranted in having recourse to amputation; at all events, a strict antiphlogistic treatment, with the application of numerous leeches in the course of the affected nerves, followed by blisters, ought not to be neglected; warm poultices, stimulating fomentations, or the turpentine liniment, ought to be applied to the wound, and these local remedies, accompanied with the free exhibition of emetic tartar, either combined with sulph. magnesicæ dissolved in water, or with calomel and opium in small but repeated doses, so as to act both on the skin and bowels—the torpid state of the latter in this disease, indicate an interruption or weakened state of the nervous system, which may arise from the increased expenditure or exhaustion of nervous power by the diseased parts.

66. *Wound of the Trachea—Occlusion of the Larynx—Aerial Fistula.*—M. RE-NACED has recorded in a late number of the *Journal Hebdomadaire*, a case of this description. The subject of it was a man named Leblanc, twenty-five years of age, who was compelled to fly his home in consequence of a criminal offence, and seclude himself in another part of France. Three years afterwards, observing some gens-d'armes approaching him, and suspecting that

they were in pursuit of him, he resolved upon suicide. Seizing upon a bistoury, he always carried about him, he plunged it into that part of his throat corresponding with the space between the cricoid cartilage and trachea. The point of the instrument being directed upwards, it entered the larynx, and made its way out again, being directed from one side to the other. A profuse hæmorrhage ensued; and his answers to the *gens-d'armes* were not intelligible. They conveyed him to the nearest village, where he was unable to procure professional assistance for several hours. It was found necessary to introduce fluids into the stomach, for the purpose of alimentation, by means of a tube, and in twenty days the patient began to have some power of articulation. But in proportion as the external wound healed, the difficulty of breathing increased; and in six weeks after the accident, the unhappy Leblanc, fearing the officers of justice, contrived to make his escape to a distant part of the country, where he took refuge with his brother. Then the terrible difficulty of breathing suggested to Leblanc the idea of re-opening the original wound, in hopes of either putting an end to his life or his sufferings. With this intention he took an opportunity of pushing a knife through the cicatrix, and thus giving a free vent to the respiration. In this auto-operation, Leblanc made an opening into the pharynx, but of small extent. His brother arriving in an hour, was terrified, and applied to the magistrate of the place, who procured a physician to examine into the state of the patient. He was conducted to the *Hôtel Dieu* of Rheims, where an attempt was made to reunite the wound; but the difficulty of breathing which ensued, caused them to abandon the attempt. The event was left to nature, and in a fortnight the wound of the pharynx was healed. In proportion as the laryngeal wound healed, however, the dyspnœa increased, as on the former occasion; and to prevent suffocation, the patient himself constructed a tube of lead, two inches in length, and more than an inch in circumference, which he introduced, with some difficulty, but which gave him complete facility of breathing. He was obliged, of course, from time to time, to remove the tube, in order to clean it, and give issue to accumulated mucosities. In two months, he was completely well, with the exception of the inconvenience of the tube. And now the unhappy man was brought before a tribunal of justice, and was condemned to death. The severity of the sentence was, however, mitigated into perpetual labour. He was sent to work at a public construction in Toulon, where he arrived on the 11th of September, 1822. There he worked till the month of August, 1825, when the leaden tube slipped into the trachea, and became impacted at the origin of the right bronchus. There it excited constant and violent fits of coughing. He was sent to the hospital, and the instrument was extracted by a surgical operation, no details of which are given. During the patient's stay in the hospital, M. Renaud ascertained the complete occlusion of the larynx, by various experiments; and yet the patient was able to articulate many words with very considerable distinctness. Many of the most distinguished medical men of Toulon corroborated these facts. They all became convinced that the articulation of sounds in Leblanc's case, was made in despite of the entire occlusion of the larynx. This man could speak so distinctly, as to be heard and understood at some distance. There were certain words and letters, however, which he could not pronounce, as, for example, the letters a, c, l, and especially o. When he attempted to speak, he opened his mouth wide, depressed the larynx, and then, by a violent effort, expelled what air he could, as if by the act of coughing. Leblanc became the subject of repeated attacks of bronchitis, which ended in phthisis, of which he died on the 28th of July, 1828.

The dissection was made in the presence of the Council of Health, and various officers of the hospital. The complete occlusion was satisfactorily proved, the obliteration of the passage being where the trachea joins the larynx. The problem remains to be solved how Leblanc could speak, under such circumstances. Our readers may remember the case of Mr. Price, of Portsmouth, who still breathes through a tube in the trachea. In his case there is a small

aperture still for air, though not sufficient for respiration. His voice is almost extinct.—*Med. Chir. Rev. July, 1831.*

67. *Case of severe Scald treated by Nitrate of Silver.*—"The following case of severe scald, by an anonymous correspondent, demonstrates the utility of the nitrate of silver in this kind of affection, while it exemplifies its powers in changing and controlling the action of the capillary vessels.

"A little child, five years old, was pushed backwards by another child, whilst naked, into a large pan of scalding water which had been just taken off the fire. It was taken out as quick as possible, and yeast was applied upon the injured parts. It was visited one hour after the accident. The whole of the back as high as the shoulder-blades, and as low as the middle of the thighs, was found severely scalded, the cuticle removed from some parts, and in other parts raised into large vesications. The whole of the belly, the penis, scrotum, and thighs, were also in a similar state, but not so severely scalded as the back. An opiate was administered, and the yeast was removed with a sponge and warm water; it was well that no oily application had been used, as its removal would have required more trouble and have given more pain. The loose cuticle was removed with that of all the larger vesications, and the small ones were punctured, so that a clear surface was obtained, to which the nitrate of silver might be applied.

"The whole surface was then moistened with pure water, and a long stick of the nitrate of silver was applied flat, once over the whole surface, and a little on the surrounding healthy skin. A little linen just moistened was then past over every part to diffuse the nitrate of silver, so that no spot might be left untouched. The child cried much less than was expected when the nitrate of silver was applied on the denuded cutis. The back on which the child would have to lie was then covered with neutral ointment spread upon linen, secured by a bandage. The thighs and belly were left exposed to the air to form an adherent eschar, being defended by a fracture cradle.

"On visiting the child about eight hours afterwards, it was reported to have fallen asleep in a quarter of an hour after the application of the nitrate of silver, and to have complained of no pain since. There appeared no constitutional disturbance.

"The very first morning after the accident this little patient was turned on his side enjoying some playthings with several playfellows who were by the side of his bed. One part on the side of the thigh was much swollen and inflamed. It was discovered that the nitrate of silver had not been applied upon it. The whole of the belly and the other parts of the thighs exposed to the air looked very well, with scarcely any vesications; the eschars were removed in two places where the tapes of the bandage had crossed the belly; these parts were now defended by means of a small plaster of neutral ointment spread on linen. On some parts the eschars were floating on the serum, these afterwards became adherent. The scrotum and penis were much swollen, but gave no pain. The nitrate of silver was applied on the part not attended to at the first dressing.

"On the second day the child was going on well; some of the eschars were becoming adherent; the scrotum and penis continued much swollen, but there was scarcely any pain, and that on the belly. There was a slight heat of skin, and tongue was a little loaded. A purgative with senna and salts was given.

"On the third day nearly the whole of the eschars were found to be adherent, and the scrotum and penis less swelled.

"On the fourth day the eschars were quite adherent on the belly, and the penis and scrotum were of their natural size.

"On the fifth day the plasters of neutral ointment were removed from the back, which presented an appearance of a recently blistered surface, in a healing state, with some loose cuticle partially attached; there was no appearance of suppuration.

"In several days more the back was healed, except in two or three small parts, which were scalded more deeply than the rest, and were covered over with coagulable lymph, nor the least suppuration having taken place. The eschars were peeling off the belly, leaving the subjacent surface quite healed.

"On the tenth day this little patient was out of doors, and on the twelfth at school, every part being quite healed.

"Mr. Higginbottom, in his Essay on the use of the Nitrate of Silver, makes the following observations on burns and scalds:

"'I have found that, by slightly passing the nitrate of silver once over a burnt surface, the pain is increased for a short time, but then totally subsides, vesication appearing to be prevented; the black cuticle peels off in a few days, leaving the part well. In cases in which the cuticle has been removed, the nitrate of silver applied on the surface induces an adherent eschar, and prevents the consequent ulceration.' p. 149.

"'I have not had an opportunity of using the nitrate of silver in very extensive recent burns, but I can have no doubt of the benefit that would accrue from it. It should, I think, be applied over the whole surface of the burn or scald once only but as in external inflammation; then the parts most severely burnt should be covered with lint, and the whole of the burnt surface with the neutral ointment spread on linen, a bandage being applied to retain the dressings in their places. I should expect that the inflammation would be checked, and the consequent vesication, ulceration, and sloughing, to a great measure prevented, except in those places where the fire had actually destroyed the parts deeply. I should not examine the parts again before the fourth or fifth day; and if the dressing adhered I would let them remain during another similar period. The application of the nitrate of silver should be repeated in the same manner, as might appear to be required. I think the burn would then be limited in its extent, and would consequently be less dangerous; for the danger is generally in proportion to the extent of surface destroyed. The nitrate of silver has certainly the property of removing the irritability of the whole surface to which it is applied, and cannot add much to the pain of the burn itself.' p. 150.

"These anticipations appear to be correct when the nitrate of silver is applied to a burnt or scalded surface from which the cuticle is not removed. It has the immediate effect of subduing the heat or burning pain, preventing vesication, and causing it to terminate by resolution.

"When the skin is denuded of the cuticle and the nitrate of silver is applied, this most irritable and inflamed surface is converted into an insensible covering, which remains adherent until the inflammation is gone, and the new cuticle is formed underneath, at which period it loosens and drops off.

"The application of the nitrate of silver is equally efficacious whether the burned or scalded surface be afterwards exposed to the air or covered by the neutral ointment. In the first case an adherent eschar is formed in two or three days; and in the second the effects of the nitrate of silver appear to continue for four or five days, producing a constant flow of serum, which continues until all the inflammation, irritation, and pain, are gone. It is possibly of little consequence which plan is adopted, as both are healed about the same period. The adherent eschar would be preferable in parts exposed, as the face and neck; or the chest, belly, or legs too, if defended by a fracture cradle, and the patient in bed.

"The advantages of the nitrate of silver in the treatment of burns and scalds appear to be of the very first importance. We have at once a covering for the injured and very irritable surface superior to any other formed and composed partly of the very surface itself. The nitrate of silver acts as an *anti-inflammatory* agency both immediately and for several days after its application.

It may be safely applied over the head, chest, or abdomen, and it is not, like arsenic, and some other remedies used externally, liable to be absorbed into the system."—*Edinburgh Medical and Surgical Journal*, April, 1831.

68. *Treatment of Syphilis without Mercury.*—Dr. TRAILL, of Liverpool, in an interesting account of the general hospital at Hamburg in the *North of England Medical and Surgical Journal*, for June last, furnishes us with the following observations on the treatment of syphilis in Hamburg. "In so great a seaport, in so luxurious a city, it may readily be supposed that syphilis is not a rare disease; and from the constant influx of persons from every quarter of the globe, one might be led to conclude that the disorder, in its most disgusting forms, might be found in the hospital of Hamburg. In this, however, we should be mistaken. I had the satisfaction of accompanying Dr. Jacobson, of Copenhagen; Dr. Eckström, of Stockholm; and other eminent physicians, to the hospital, where Dr. Fricke had the kindness to submit to examination a great number of syphilitic cases, and to detail the history of each, as he pointed out the various stages of the complaint.

"The public prostitutes, on the first symptoms of this disease, are compelled to enter this hospital; and we had full leisure and opportunity to examine the various forms of the disorder to which they are liable.

"The mode of inspection is very minute, and is regularly practised, in all cases, by the medical officers, with a patience and manliness to which there is among us no parallel. Every change of symptoms perceived by Dr. Fricke is announced, and immediately entered in the case book by one of the assistant surgeons. Among thirty or forty females of that class, then minutely inspected, I did not discover a single instance of deep chancre with retorted edges. The chief symptoms were slight ulcerations, often little else than excoriations, *condylomata* or warty excrescences; and in incipient cases, specks of purulent matter filling the orifices of the mucous follicles or glands on the parts within the *labia*, and which were often so minute as to require a magnifier to render them apparent. In this insidious form of the disease, as Dr. Fricke remarked, the several symptoms of syphilis may be communicated by a female, without her being at all aware that she is diseased. Such instances he stated as having often fallen under his observation. He pointed out many examples of this affection of the mucous follicles within the *labia*; and, with a fine silver wire, demonstrated the existence of minute collections of matter in them, and, by slight inflammatory action, for a time closing their orifices. Among all the prostitutes here collected, I did not perceive a single case of ill-conditioned chancre, or of corroding ulceration; and even simple buboes were not very numerous.* Of secondary syphilis, with the exception of a few cases of cutaneous eruptions, and ulcerated throats, chiefly among seamen, there were fewer traces than I ever saw among so many patients labouring under this disease. *Blenorrhœa im-pura* and *leucorrhœa* are very frequent, especially among the prostitutes.

"Every form of syphilis is treated in the Hamburg hospital WITHOUT MERCURY IN ANY FORM: and I have the authority of Dr. Fricke, and of all the other medical gentlemen of the establishment, for the important fact, that they never find the disease to require its use, and that this mode of treatment is not more liable than the mercurial one to be followed by what are considered as secondary symptoms.

"I did not find a single instance of any person disfigured by the disease; except one female, whose nose had fallen in *before* she was received in the house; and she had previously undergone a severe course of mercury in Berlin. Since her admission here, she has been treated on the anti-mercurial plan, and when I saw her, she appeared to be convalescent. This method of cure consists in frequent ablutions with tepid water, a very rigid low diet, almost amounting to starving, brisk purgatives and rest. Zinc and saturnine lotions are occasionally employed, but the circumstances above enumerated are the great means of cure. Even sarsaparilla is little used, and mercurials never. The success of this

* The ill-conditioned chancre with ragged retorted edges might indeed be found among sailors received into the hospital; but the remarkable exemption of the public prostitutes from the severer forms of the disease is not a little worthy of attention.

practice is established by the experience acquired in the present hospital and its predecessor, at least as far back as fifteen years ago.

"Dr. Eckström, physician to the king of Sweden, informed me that the same treatment had been still longer pursued at Stockholm with equal success; and that the practice was adopted at Hamburg from the example of the Swedish hospital; which however borrowed it from the Royal Hospital at Copenhagen, where it had been established by the experience of a Danish physician, a pupil of our celebrated John Hunter.

"After the demonstrations were concluded, Dr. Fricke asked my opinion on the nature and treatment of the diseases he had shown. On remarking that few of the cases among the prostitutes appeared to have what we considered decided marks of virulent syphilis; and that many of them would be considered little more than excoriations, or the consequences of gonorrhœa; he justly remarked, 'Whatever opinion might be entertained on that subject, it was no less remarkable, if we refuse to give the name of syphilis to these diseases, that, among the class of persons most exposed to venereal infection, the public prostitutes, in one of the largest seaports of Europe, proverbially dissipated, true syphilis is unknown: for we had seen every variety of the disease which is usually met with in Hamburg.'

"He further added that the anti-mercurial mode of treatment had *never*, to his knowledge, been followed by diseased bones, unless where much mercury had been previously used; and the remark was confirmed by Dr. Eckström."

69. *Case of Spontaneous Varicose Aneurism.*—By JAMES SMYTH, Esq. F. R. C. S. L. and E.—Varicose aneurism, or a sac containing blood, and communicating with the trunks of both an artery and vein, is a rare occurrence; and the only instances which have hitherto been recorded either of it, or the analogous condition of aneurismal varix, where the blood passes at once from the trunk of an artery into that of a vein, originated from wounds. The femoral, popliteal, and subclavian vessels, and more frequently those at the bend of the arm, have been thus affected, in consequence of having their contiguous coats divided by some sharp-pointed weapon; but no instance has hitherto been observed of the opening taking place spontaneously, and I therefore think it right to relate the following case of varicose aneurism, which affected the aorta and vena cava, and occurred without any external violence.

Robert Scott, aged twenty-two, in the beginning of October, 1830, began to complain of pain in his back and limbs, throbbing in the epigastric region, and an incessant whizzing noise, which seemed to proceed from the same part. His sufferings became so severe in three or four weeks, that he found it necessary to confine himself to bed, and then came under the care of my friend Dr. Robertson, who soon afterwards requested me to see him. He complained greatly of pain in his back, and coldness of his feet; but what seemed to occasion both him and his friends most concern, was the constant noise that has been already mentioned. On examining the abdomen while he lay on his back, I readily felt the pulsation of a large tumour; but it was not so strong and incompressible as that of an ordinary aneurism, and in the erect posture might have readily escaped observation.

The treatment consisted in the use of all those means which tend to moderate the force of the circulation, but proved quite unavailing. The patient's sufferings became progressively aggravated, and a new symptom made its appearance, viz. œdema of the inferior extremities and generative organs. The swelling of these parts attained a degree that I never saw equalled, and occasioned an extraordinary contrast between them and his superior extremities, which were thin and emaciated. In the latter end of January the patient died rather suddenly, immediately after complaining of a pain at his heart.

After death, the œdema, which had previously been confined to the parts below the pubis, diffused itself over the whole of the body, so that when the dissection was commenced by the usual longitudinal incision of the integuments

of the trunk, they were found to be distended fully three inches, and a copious stream of serous fluid continued to issue from them, during nearly the whole of the subsequent examination.

In order to expose the disease completely, I removed the thoracic and abdominal viscera, and then traced the aorta from the commencement downwards. Having found an aneurismal tumour seated at the bifurcation of the artery, which adhered intimately to the vena cava and vertebræ, I dissected out the iliac vessels, cut them across some inches beyond their division, and then sawed away the bodies of the lumbar vertebræ, together with the promontory of the sacrum.

On examining more particularly the preparation thus detached, we observed that the tumour was of a flattened oval figure about the size of a large orange; that it adhered to, and had caused absorption to some depth of the bodies of the three lowest lumbar vertebræ, and that it was intimately connected with the vena cava, which appeared much flattened, distended, and thickened. It was now suggested that there might be a communication between the aneurism and vein, and on making a small opening into the sac, so as to evacuate its contents, we found this actually to be the case. Immediately above the bifurcation of the vena cava there was a round aperture somewhat larger than a sixpence, which afforded a free entrance into it from the aneurism.—*Ed. Med. and Surg. Journal, July, 1831.*

70. *Lithotrity*.—We have already announced, Vol. VII. p. 246, that the general administration of hospitals had given to M. Civiale the charge of a ward in the Hospital Necker, for the treatment of calculous patients by lithotrity, and we have also given an abstract of the report of M. Civiale of the cases treated by him during the first year. This memoir was referred by the Academy of Sciences to a committee, and on the 26th of April last, M. Larrey, on behalf of that committee, reported, that without suspecting the accuracy of the statements made by M. Civiale, he thought it his duty to apply to the council of administration of hospitals to ascertain the number of patients sent to M. Civiale's ward, and the result of the treatment, and M. L. says that M. Civiale is mistaken as to the number of patients received into his ward. This number M. L. states to have been twenty-six, instead of sixteen as reported by M. C. M. Larrey further states that twenty-four of these patients were operated on, and that eleven have died. Several of these had undergone lithotrity. M. L. blames M. C. for presenting to the academy only the more prominent points in his practice, and he states that the number of patients who have died after submitting to lithotrity, is proportionally as great as those who die from the operation of lithotomy in the other hospitals of the capital. M. Larrey terminates his report with some compliments to M. Civiale for the zeal which he continues to display in the improvement of lithotrity, and he calls the attention of practitioners to the comparative results of lithotrity and lithotomy.

At the next meeting of the Academy, a letter was read from M. Civiale, in which this surgeon charges M. Larrey with having made several mistakes in his report. M. C. states, that he had received during the period stated in his report, but nineteen patients, of whom fourteen only had calculi; to this number two must be added, included in M. C.'s report, and who were operated upon in private practice. Four of the patients received had no calculus; four of those who had a calculus were not operated on; two who had submitted to the preliminary trials could not support the treatment. Thus the number operated on was eleven, and not twenty-four, as said by M. Larrey. The error of the latter arose, according to M. C., 1st, from his having included in the period of his report four months more than was included in that of M. Civiale; 2d, from his having considered all the patients as calculous; 3d, from his supposing all the calculous patients to have been operated on. M. Civiale avers that several patients whose deaths are attributed by M. Larrey to lithotrity,

have never been operated on; others whose condition is said to have been exasperated by attempts at the operation have never been subjected to these trials; and finally, that a patient said to have died in consequence of cystotomy, did not undergo this operation.

In answer to this, M. Larrey referred to the documents joined to his report, and which were deposited with the secretary of the Academy.

MIDWIFERY.

71. *Cæsarean Operation*.—In the *Archives Générales*, for February last, we find an extract from the thesis of M. JOLLY, a Parisian graduate, in which the author gives an account of the remarkable success of his father, a surgeon of Château-Thierry, in the performance of the Cæsarean operation. He has operated six times, five of his patients being country-women, and the sixth an inhabitant of the town. In all the labour had lasted at least forty-eight hours before the operation was performed; and the waters had been discharged. In one patient only of the six no fatiguing attempts had been made by midwives or accoucheurs to finish the labour. He always made the incision on the linea alba, between the navel and pubes, and divided the uterus in the same direction, taking care to restore it first to the perpendicular position if it was inclined. There was never any material hæmorrhage; no patient, indeed, lost more than two ounces of blood. In dressing the wound he always had recourse to the gastrorraphy, which, instead of producing the ill consequences usually ascribed to it, appeared to him always to contribute greatly to the cicatrization of the wound. In two of the six cases no untoward symptom whatever followed the operation, and the cure was perfected before a month expired; in two others a smart degree of inflammation of the abdomen supervened, but was successfully combated by venesection, baths, and fomentations; and the remaining two died evidently of metropéritonitis, one on the fourth day, the other at a later period, when there appeared every chance of her recovering under the antiphlogistic treatment. Of the six infants four were born alive and survived; but two were dead after the operation was concluded, although they were thought to have been alive before it was performed. In no instance did hernia ensue; but there was always some prominence of the abdomen at the cicatrix, which had diminished from six inches in length to three only. These results are much more favourable to the operation than any previously published.

72. *Obliteration of the Vagina*.—M. LOMBARD, of Geneva, communicated to the Royal Academy of Medicine, at their sitting of the 15th of March last, the case of a female, the mother of four children, and who when pregnant for the fifth time, injected into her vagina, for the purpose of exciting abortion, some sulphuric acid, which produced inflammation, and the obliteration of the superior two-thirds of this organ. The woman, nevertheless, went her full time, and after thirty-six hours labour, an unsuccessful attempt was made to open the passage with the knife. The patient died. The Cæsarean section was then performed, and a dead infant found. The uterus was ruptured at its middle on the left side, and to the extent of four or five inches.—*Revue Médicale*, April, 1831.

MEDICAL JURISPRUDENCE AND MEDICAL POLICE.

73. *On the Grinder's Phthisis*.—It has long been known that of all unhealthy trades, none is equal in its ravages to that of the steel-grinder. The public attention has been for some time strongly attracted to the subject in Sheffield, by the miserable fate of the workmen of that class in the town; and, in conse-

quence, more accurate data have been supplied on the extent of the evil than in regard to any other trade in Britain. The whole information hitherto collected has been thrown by Dr. Knight of Sheffield into the form of an Essay, of which we shall here present an analysis.

The articles on which the Sheffield grinders are employed, are forks, awl-blades, fire-irons, razors, scissors, pen-knives, table-knives, large pocket-knives, files, joiners' tools, saws, sickles and scythes. Some of them use dry grind-stones only; others only wet grind-stones; others sometimes the one, sometimes the other. The total number in Sheffield is about 2500. They usually commence the employment at the age of fourteen, and, at this period, are, for the most part, raw-boned, uncouth, vigorous, hardy lads, apparently without any particular predisposition to pulmonary disorders. When their apprenticeship is concluded, in seven years, they generally proceed to work on their own account; but some are obliged to abandon the trade during their apprenticeship, being unable to stand the bad effects of the dust on the lungs. During the war a considerable number enlisted at an early age; but now, that this outlet no longer exists, they usually stick to their trade throughout life, though well aware of its fatal tendency.

Till the commencement of the last century, the grinders were not observed to be an unhealthy set of men; because they worked chiefly in the country, and mostly in large rooms open at the roof, they practised other departments of the cutlery trade at the same time, such as hafting and forging, and were consequently but a short time employed in grinding; and besides, they were often for months together only four or five hours a-day at work, on account of the scarcity of water, which alone then was used for driving the wheels. As trade increased, however, a greater subdivision of labour was introduced; in 1786 the steam-engine was substituted for water-power, and the grinders gradually became confined entirely to this employment, at which they worked eleven hours a-day, in the town, and in small rooms containing eight or ten stones, and frequently so many as sixteen workmen.

The consequences of this change of system on their health have been dreadful. The dry-grinders die between the age of twenty-eight and thirty-two; those who use both dry and wet wheels die at the age of forty, or forty-five at the utmost; and even the wet-grinders do not survive the age of fifty if they remain constantly at the trade. In 1822 it was ascertained, that among 2500 grinders of all classes, there were only thirty-five who had attained the age of fifty, and not above double that number who were forty-five: while among eighty adult fork-grinders, who use only dry stones, there was not a single individual thirty-six years old. The singular fact, too, appears to have been established, that the most industrious men were the shortest-lived, while the elderly men had in general led dissipated lives, so that even a combination of intemperance was advantageous, simply because it drew the workman in part from his fatal occupation. Some further statistical facts are supplied on the subject by Dr. Knight's experience as a medical officer of the Sheffield Infirmary; and they all tend towards the same conclusion. Among 250 grinders who had been in-patients and out-patients in Dr. Knight's department of the service between 1817 and 1830, 154 were received on account of pulmonary complaints; while among 250 persons of all other trades, 56 only had diseases of the respiratory system. Of the 154 cases of pulmonary disease among grinders, 13 died while under treatment in the establishment; while of the 56 pulmonary cases from other trades, only one died; showing not only that in the former pulmonary diseases are more common, but likewise that they are of a worse character. As to the respective ages of the 250 patients of the two classes, it appears that among the grinders 124 were above thirty, in other trades 140; above thirty-five, 83 grinders and 118 general tradesmen; above forty, 40 and 92; above forty-five, 24 and 70; above fifty, 10 and 56; above fifty-five, 4 and 34; above sixty, and 19.

According to Mr. Knight, the workmen almost invariably begin to suffer to-

wards the close of their apprenticeship. "Such," says he, "as are predisposed to pulmonary complaints soon begin to experience the injurious effects of grinding; and as at that time of life they are not too old to be put to other trades, they occasionally leave the wheel, and thus preserve both their lives and their health, while there more robust companions are sacrificing both. Grinders who have good constitutions seldom experience much inconvenience till they arrive at about twenty years of age. About that time the symptoms of their peculiar complaint begin to steal upon them; their breathing becomes more than usually embarrassed on slight exertions, particularly on going up stairs; their shoulders are elevated, in order to relieve their constant and increasing dyspnœa; they stoop forward, and appear to breathe most comfortably in the posture in which they are accustomed to sit at their work; namely, with their elbows resting on their knees. Their complexions assume a dirty, muddy appearance, their countenance indicates anxiety; they complain of a sense of tightness across the chest; their voice is rough and hoarse; their cough loud, and as if the air were driven through wooden tubes; they occasionally expectorate considerable quantities of dust, sometimes mixed up with mucus; at other times in globular or cylindrical masses enveloped in a thin film of mucus. *Hæmoptysis* frequently occurs." The expectoration commonly becomes purulent as the disease advances, and is occasionally fetid. Thickening of the larynx or trachea also occurs, with tenderness and cough on pressure. The pulse at first ranging from 80 to 90, subsequently reaches 120. About the age of thirty the dry-grinders are commonly forced to relinquish their employment; and the wet-grinders are compelled to do so likewise about ten years later. By this time the dyspnœa and sense of choking up of the lungs are urgent; the cough is incessant; dropsy is added to the other symptoms in many; the usual symptoms of advanced phthisis appear; and death at last ensues, but not till after many months, or even years of acute suffering. This course is occasionally modified by accidental circumstances, inducing acute bronchitis, pleurisy, and peripneumony; which diseases are always severe, obstinate, and intractable. The acute symptoms of the grinder's phthisis may be frequently subdued by early and proper treatment; and there is no doubt that they may be even effectually dispelled if the individual can quit his unlucky trade. Without this, however, the relief obtained is merely temporary.

The best treatment in the early stage consists in rest, emetics, leeches, antiphlogistic regimen, diaphoretics, mercurial alteratives, and saline aperients. Emetics in particular seem to procure immediate and great relief. In the second stage leeches, cupping, various counter-irritations on the chest and throat, digitalis, colchicum and squills are resorted to sometimes with advantage; and even in this advanced stage complete recovery may be brought about, if the trade is abandoned, as is shown by individuals regaining their health completely, and keeping it on entering the army.

Dr. Knight has had no opportunities of making any pathological observations on the state of the respiratory organs after death, as the grinders have had till lately a rooted aversion to morbid inspections. He is inclined, however, to consider the disease as a general bronchitis merely.

Some years ago a great deal of attention was paid by the master cutlers at Sheffield to the mode of preventing the deleterious effects here pointed out; and in consequence various contrivances were suggested for preventing the dust from being diffused through the apartments of the workmen. Every plan, however, has turned out more or less defective, and Dr. Knight says that no precautions are now taken. Among the methods devised two deserve mention. In one the wheels were enclosed in boxes, the inside of which was kept moist; a sufficient space was left free over the stone for the men to apply the instrument to be ground, and a set of magnets were placed over the free space to catch the steel dust. This device, however, was found ineffectual, because the steel dust only was caught, which perhaps is not the most detrimental part of it; and the magnets required frequent cleaning, which the workmen could not be

trusted to perform. The other was a simpler and more efficacious method. The wheel being inclosed in a box as above, a wide tube extended from the box to the external air; and it was found that the rotatory motion of the air around the wheel produced a strong current, which carried much of the dust away by the chimney. This current was aided in its operation by a fan placed at the upper orifice of the chimney and moved by the steam-engine. It appears, however, that this ingenious plan does not remove the finer particles of dust, which are probably the most injurious; and the contrivance has consequently been generally abandoned. Dr. Knight very properly suggests that by further improvements, such as the establishment of proper fixed currents in the workshops, and the careful removal of the previous day's dust before the men begin their operations, the plan last mentioned may at length be made so far effectual as greatly to diminish the inconvenience; and that what remains may be counteracted by restricting the period of working. But he complains that after a few years of excitement, the subject no longer seems to interest either the workmen themselves, their masters, or philanthropists at large.—*Ed. Med. and Surg. Journal*, July, 1831, and *North of England Med. and Surg. Journal* for August and November, 1830.

74. *Medico-legal Researches on Arsenic*.—M. HUNEFELD, of Grifswald, has published some interesting observations on this subject, in the *Archiv. für Mediz. Erfahrung v. Horn, Nasse und Wagner*, for September and October, 1829.

It is known that after poisoning with small doses of arsenic, it often happens, that in examining the body, none can be found, if it has been interred some time. The question that naturally presents itself is, what becomes of it? The author, from experience, thinks that it can disappear in one of two ways.

1st. It may combine with the tissues, and thus escape the ordinary reagents. In this case, M. Hunefeld treats the animal matter, supposed to contain arsenic with chlorine, and, by this means, he has frequently discovered traces of poison, which he could not find by the ordinary reagents.

2d. The arsenic may exhale in the form of an arseniated hydrogen gas; the author recommends from this circumstance, that, in disintering bodies suspected of being poisoned by arsenic, that the lid of the coffin be not taken off at once, but that a hole be made first in it to avoid the deleterious effects of gas. —*Bulletin des Sc. Méd. Jan. 1831*.

75. *Poisoning with a Tobacco-clyster*.—An interesting case of poisoning with a tobacco-clyster, is related by Dr. GRAHL, of Hamburg, in *Hufeland's Journal*, for October, 1831. Not having yet received that Journal, we take the following notice of it from the *Edinburgh Medical and Surgical Journal*. The subject of the case was a female, twenty-four years of age, who was liable to dyspeptic symptoms and obstinate constipation, on account of which she had been for a few days under the care of the relater, and with considerable advantage. One day the patient's mother proposed that a tobacco-clyster should be administered, which Dr. Grahl peremptorily prohibited. Nevertheless, on the following day she took the advice of a female quack of her acquaintance, who recommended a clyster made with an ounce or an ounce and a half of tobacco, boiled for fifteen minutes in a sufficient quantity of water. In two minutes after it was administered, the patient was seized with vomiting, violent convulsions, and stertorous breathing, which gradually became weaker and weaker till she died, three-quarters of an hour after the clyster was administered. The following were the appearances remarked in the body, which was examined two days after death:—Great lividity of the back, slight lividity of the abdomen, retraction of its anterior parietes, paleness of the lips, firm closure of the jaws, flexibility of the joints. The omentum very red, without gorging of its veins; the small and great intestines, both outside and inside, gorged with blood and red; and in some parts of the mucous membrane extravasated bloody patches. The other abdominal viscera in a natural state; the great vessels of the abdomen

more empty of blood than usual; the stomach natural; the lungs pale red; the heart empty of blood in both sides; the brain quite natural, and without any accumulation of serosity in the ventricles.

MEDICAL STATISTICS.

76. *Half-yearly Report of Cases in Midwifery, which have occurred in the Northern District of the London and Southwark Midwifery Institution.* By C. WALLER, Esq.

1831.	Number of Women delivered.	Sex of Children.		Born Alive.	Stillborn	Presentation.
		Males.	Females.			
January....	35	22	13	31	4	{ 32 Natural 1 Foot 1 Premature 1 Face to Pubis
February..	27	16	11	25	2	{ Natural
March.....	35	18	17	34	1	{ 34 Natural 1 Breech
April.....	29	12	17	25	4	{ 28 Natural 1 Breech 1 Premature
May.....	41	20	21	37	4	{ 39 Natural 1 Face to Pubis 1 Foot 1 Premature
June.....	38	24	15	39	0	{ 37 Natural 1 Face to Pubis 1 Case of Twins
Total.....	205	112	94	191	15	

London Medical and Physical Journal, August, 1831.

77. *Medical Statistics of Nantz.*—We find in the *Bulletin des Sciences Medicales*, for January last, a brief notice of an interesting memoir by M. MARESCHAL, on the mortality of the city of Nantz, contained in the *Journal de la Section de Medicine, de la Societe Academique du departement de la Loire inferieure*, a journal we regret not yet having received.

The deaths from consumption in Nantz are one-tenth of the whole number, excluding those from epidemic diseases. The greatest mortality in phthisis occurs between the twentieth and fiftieth years of age.

Of the deaths from cerebral diseases, two-thirds are adults; but from hydrocephalus alone the deaths of children are to those of adults as twenty-two to three.

Of 64 deaths from apoplexy and paralysis, 7 only occurred in individuals below fifty years of age.

Organic diseases of the heart most frequently occur after the fortieth year of age, in the proportion of twenty-three to six.

The result of observations during twenty consecutive years, give the following as the succession of the months, arranged in the order of decreasing mortality, viz.—January, December, February, March, April, May, November, August, September, October, June, July. The months in the years 1827 and 1828, owing to the influence of epidemics, follow a different order.

CHEMISTRY.

78. *Odour of Musk*.—M. BLEY has found that the golden sulphuret of antimony entirely deprives musk of its odour. The kermes mineral converts the peculiar odour of musk into an alliaceous one. This last may be important in a medico-legal point of view. Sulphur alone does not produce any changes.

79. *Ilicine*.—At a meeting of the Royal Academy of Sciences of Paris, on the 23d of May last, M. DELESCHAMPS announced that he had succeeded in obtaining a new vegetable matter from the bark of the holley, to which he had given the name of ilicine, and which may be substituted for quinine in the treatment of intermittent fevers.

80. *Analysis of Urinary Calculi*.—The Medical and Physical Society of Calcutta have adopted the excellent plan of printing minutes of their monthly meetings, with an abstract of the papers read, and sending it to their members and correspondents. We have been favoured by their learned secretary, W. TWINING, Esq. who is known to our readers by his excellent papers on ophthalmology, with the minutes of their meeting of May last. We find in this the analysis of ten calculi by Mr. Twining. Of these, five consisted principally of lithic acid and lithate of ammonia—two of oxalate of lime—two of oxalate of lime with minute nuclei of lithic acid—one had a lithic acid centre and phosphate of lime exterior.

Mr. Barnard sent to the Society thirteen calculi, five of which consisted of lithic acid and phosphates—four of lithates and lithic acid—one fusible—one fusible and oxalate of lime with a trace of lithic acid—one oxalate of lime.

Mr. Brett presented seven calculi, four of which were composed of lithic acid and lithate of ammonia, with more or less of triple phosphate exterior—two of oxalate of lime with lithic acid nuclei—and one alternating, composed of lithic acid nucleus, thin lamina of oxalate of lime, then lithate of ammonia, and exterior of compact lithic acid.

“As far as the analysis of the calculi now before the Society will enable us to judge,” says Mr. Twining, “the urinary calculi of natives of India, appear to be subject to the same laws in respect to composition and formation, as obtain among Europeans in our own climate. Lithic acid, and lithate of ammonia, predominate in the calculi that have been yet collected in India; and we observe, that lithic acid, or oxalate of lime, are the most common nuclei of urinary calculi amongst natives. Whether the deposition of these substances, originally depend on some local disease of the kidneys and urinary secretion, or on constitutional disorder, the lithates and oxalates appear to coalesce most readily so as to form the nuclei of calculi. Whereas the morbid excess of the phosphates, though frequently existing in the state of fine white powder, or white sand, and in most constitutions readily deposited whenever a nucleus is afforded, are rarely found to constitute the centre of calculi. But when any extraneous body is lodged for a considerable time in the bladder, a deposit of the phosphates readily takes place in preference to the lithates or oxalate of lime; more especially if the foreign body be rough, and the bladder in a state of irritation. After the deposit of those substances, lithates and oxalate of lime has gone on for some time, it appears to cease; but the requisites to form concretions of the phosphates existing, namely, nucleus and irritation, the exterior of many large urinary calculi are composed of those substances, which rarely form the nucleus.”

MISCELLANEOUS.

81. *On Gelatine as an article of Nutriment*.—The discovery of M. D'Arcet, member of the Institute, of the means of preparing the gelatinous matter of bones, so as to form a cheap and wholesome article of food, has excited great attention in Paris. More than two years have elapsed since the discovery, and

the system of M. D'Arcet has been adopted in several of the hospitals, and in the *Maison de Refuge pour l'Extinction de la Mendicité* of M. de Belleyme. The gelatine has also been used in making sea-biscuits, which were used by the troops during the late expedition against Algiers. The mode of preparing both the gelatine and the biscuits is minutely laid down in the pamphlets published by M. D'Arcet. These experiments had invariably been attended with success; but on the 6th of June, M. Donné, a young medical student, communicated to the Royal Academy of Sciences at Paris, some remarks tending to throw a doubt on the subject. He stated, that being deeply impressed with the importance (particularly to the lower classes) of ascertaining whether the gelatine did really possess the nutritive qualities attributed to it by M. D'Arcet, he resolved to go through a series of personal experiments on the subject. With this view, recollecting that ten grammes of dry gelatine were stated to be equivalent to half a litre (about two basins) of the best meat broth, he began by taking that quantity every morning with three ounces of bread, and gradually increased the quantity up to fifty grammes, which constituted his sole nourishment up to six o'clock every day; the gelatine was differently flavoured, so as to prevent its exciting any feeling of nausea or disgust. During the six days which this experiment lasted, M. Donné experienced a constant sensation of sinking and feebleness, and on the sixth day found that he had lost two pounds weight. The next week he substituted ordinary meat broth for the gelatine, taking a litre and a half (about five or six bowls,) and from four to five ounces of bread daily; during this week he experienced no sensation of feebleness, and at the end of it had regained a pound and a half of his lost weight. At the same time M. Donné tried similar experiments on two dogs, giving the one, gelatine mixed with a little bread, and offering the other nothing but simple gelatine. The former at first refused it, but at length ate daily as much as was equivalent to twelve or fifteen half litres of good broth. On the sixth day the dog had lost four ounces in weight, and was so voracious that he even greedily devoured some white lead prepared for cleaning plate, and during the second week totally refused gelatine, living only on about an ounce and a half of bread which was given him per day. He ultimately terminated the experiment by climbing to a great height, and taking possession of a quantity of boiled beef which was supposed to be out of his reach. The other dog could not be prevailed on to touch the gelatine, even after being for five days totally without food. M. Donné, therefore, considered it cruel to pursue the experiment further, and gave him his usual food. From these circumstances, M. Donné was induced to doubt the nutritive qualities of gelatine, and begged the Academy to appoint a committee to investigate the subject, which was accordingly done. At the succeeding meeting (13th June) M. D'Arcet addressed some observations to the Academy on the subject alluded to by M. Donné; he stated that butchers' meat contained, on an average, in every 100 lbs.—Dry meat, 24 lbs.; water, 61; bone, 15, total, 100 lbs. Bones contain on an average—Earthy substance, 60 lbs.; gelatine, 30; fat, 10; total, 100 lbs.

From this calculation it is evident that the 15 lbs. of bone contained in every 100 lbs. of meat would furnish 40-100 of their weight, or 6 lbs. of animal substance, so that 100 lbs. of meat, which now furnish but 24 lbs. of dry meat, might, by rendering the gelatine and fat of the bones available, supply thirty, or in other words, four oxen would furnish as much alimentary substance as is now obtained from five. With respect to the nutritive and salubrious qualities of gelatine, he remarked, that the committee appointed by the Faculty of Medicine, consisting of MM. Le Roux, Dubois, Pelletan, Dumeril, and Vauquelin, after having given gelatine soup to forty patients and others, during a period of three months, came to the conclusions:—1. That the use of gelatine was both an amelioration, and a source of economy in the alimentary system. 2. That gelatine soup is at least as palatable as the ordinary hospital soup; and 3. That gelatine is nourishing, easy of digestion, and wholesome, and cannot in any manner, be productive of injurious effects on the animal economy. The apparatus in the hospital of St. Louis is capable of preparing nine hundred soups per day;

it has been in use twenty months, and has supplied 550,800 portions of gelatinous food. Numerous reports have been made on the subject to the general administration of the hospitals, all of which agree in stating that the change in the mode of nourishment is a decided improvement; that the convalescent patients acquire strength much more rapidly than before: that it is a source of economy highly important to the poor; that part of the meat formerly employed in making soup may now be given to the patients, either roasted or in other forms; and finally, they all recommend the adoption of the system of gelatinous nourishment in all similar establishments. At the Hôtel Dieu, 443,650 rations of gelatine have been furnished in fifteen months and a half; and six reports have been made, all of which are equally favourable with those above referred to. They state particularly that since gelatine has been employed, thirty killo-grammes of roast meat may be given to the patients daily, without reducing the quality of the soup at all below its former standard.

When M. D'Arcet had concluded his remarks, M. Gay Lussac animadverted in strong terms on the injustice and insufficiency of the mode of experiments adopted by M. Donné, which he characterized as wholly inconclusive, although calculated to produce a most injurious effect on the public mind, which is always easily impressed with the idea that the poor are neglected, particularly in hospitals. He reminded the Academy that it was well known that no single substance was alone sufficient to support animal nature; that animals fed on sugar alone had died from inanition; yet it would not be pretended that sugar is destitute of nutritive qualities; and though the nutritive qualities of potatoes, taken with other food, are universally known, a dog fed wholly on that vegetable dies in six weeks; whereas M. Donné wishes it to be supposed that because two dogs refused to live upon gelatine, administered alone, we know not how, and because M. Donné himself grew thin on a sudden adoption of simple gelatine diet, the adjunction of gelatine, as an addition to, and taken in conjunction with animal food, is wholly without advantage. On the 20th of June, M. Donné replied to M. Gay Lussac, by saying that his sole object in proposing the question was to have it fully and fairly investigated; since if it can be established that gelatine does possess the nutritive qualities ascribed to it, the advantage to the poorer classes will be immense; whereas, on the other hand, should they be induced to employ the bones as a means of nutriment, when the fact may turn out to be that the gelatine is not nutritious, their condition is rendered more deplorable than before. In conclusion, he said that he rendered full justice to the active and pure philanthropy of M. D'Arcet, which had induced him to make the greatest sacrifices both of time and money, in order to bring the gelatinous system to perfection.—*The Journal of the Royal Institution of Great Britain, August, 1831.*

82. *Cholera*.—We had intended in the present No. to have given a summary of the present state of our knowledge in relation to this disease, and for this we have ample materials, the press having been extremely prolific in accounts of the progress and speculations on the nature and most successful mode of treating this scourge. We postponed it however for the purpose of making room for a review of a work which the profession have been anxiously expecting, and the sheets of which, as far as printed, we were favoured by the publishers with a copy of. After this review, however, was actually in type, the completion of the work having been unexpectedly delayed, we were compelled to postpone the review. This occurred at too late a period to permit us to arrange, in proper form for publication, our notes on cholera; and we can only at present state, that that disease was extending its ravages at the latest dates, and that the most contradictory statements are given respecting every point relating to its mode of propagation, nature, and best method of treatment. From this mass of conflicting testimony, we shall in our next No. endeavour to present as clear a view of the subject as a looker-on, who has no preconceived notions in relation to the subject, may take, after a careful examination of the statements on both sides.

AMERICAN INTELLIGENCE.

Remarks on the Climate of the Lower Country of South Carolina. By THOMAS Y. SIMONS, M. D. Port Physician and late President of the Medical Society.—In an interesting essay on malaria in the last number of this journal, by Dr. Caldwell, I was surprised to observe the following observations in a note. "The low lands of the Carolinas, and I believe also of Georgia, are much healthier now than they were at the close of the revolutionary war. *The cause is obvious.* They are under higher cultivation. At the period referred to, white men could not labour in them and retain their health. Negroes were therefore necessary. But they are less necessary now. *In twenty or thirty years more, perhaps within a shorter period, they will not be necessary at all,*" &c.

It is my object in this communication to correct the error which Dr. Caldwell has so strangely fallen into. It is an observation of Cullen, "that there are more false facts than false theories in medicine," and my reading continually convinces me of the truth of the remark of that great physician.

The lower country of South Carolina, in place of being more healthy, is decidedly more sickly. Many situations where large families are reared, cannot now be inhabited during the summer and fall, except at the imminent risk of life. The reasons for this change are, I apprehend, these. 1st. That a great quantity of trees have been destroyed for clearing land for cultivation, for fences to enclose the land, and in some places for fuel to supply Charleston; and 2d, that the reservoirs, swamps, and ponds, with which the lower country of South Carolina abounds, remain stagnant, and in no manner drained. I concur with Dr. Caldwell, that wherever lands are well drained, and a proper dry culture is introduced, the healthiness of a country will be improved, and that the draining must be complete; but I deny that any such improvements in the lower country of South Carolina has occurred, or is, I fear, likely to occur. There are on the contrary many plantations, the residence of our ancestors, which are abandoned because the product of the land would not be equivalent to the expense of cultivation, and so far from being improved they have run to waste.

In our lower country there are many small villages located in the pine land, the soil of which is barren and porous, studded with pine trees, and remote from any large swamps or reservoirs, and the only manner in which health is here preserved is the caution used in preventing a single tree to be cut down, or cultivation of any kind to be carried on. Wherever this rule has been deviated from, the villages have become sickly. But no one thinks of residing on their plantations during the summer, while our elder planters and our ancestors did reside on their places, thus showing that our country, in place of being more healthy, is actually more sickly, and in this assertion I am confident I will be sustained by the opinion of every medical gentleman in the lower country of South Carolina.

I shall now reply to the unauthorized conclusion to which Dr. Caldwell has arrived at, by a very illogical course of reasoning, viz. assuming false data. Dr. C. remarks that, "In twenty or thirty years more, perhaps within a shorter period, they (the negro slaves) will not be necessary at all. White men will do their work to greater advantage. By that condition of things, the abolition of slavery in our country will be greatly facilitated." Now this I unhesitatingly declare to be as incorrect a statement as could possibly be made. I am aware that some individuals from a false idea of philanthropy, are desirous of making the slaves free, to be miserable, even at the expense of the life and happiness of their fellow creatures the whites. In

their Quixotic crusade, they will listen neither to reason or truth. They will not believe that the condition of our slaves are better, incomparably better, than the negroes residing at the north, or the peasantry of Europe, and they gladly seize upon every opportunity of upholding the principle of universal emancipation, a principle noble in the abstract, but which never perhaps can be fully realized, unless at a sacrifice too great for the experiment to be made. Be this however as it may, it is evident that Dr. Caldwell's assertion is calculated to cherish the hopes of the abolitionists, and lead them to efforts which may be dangerous in their consequences. I therefore must ask your indulgence when I show the fallacy of the conclusion to which Dr. Caldwell has arrived.

I have already asserted, and my assertion will be borne out by the testimony of every physician of the lower country of South Carolina, that so far from the country becoming more healthy, it is actually becoming more sickly, and so far from any improvements being made by cultivation, that many places are deserted, and those plantations which are in the highest state of cultivation are too sickly for white persons to live on with impunity, because it is not, nor will be for centuries, practicable to clear off the immense reservoirs, swamps and ponds with which our lower country is filled. But supposing the country appropriated to dry culture should be so far improved and drained, what is to become of our extensive rice fields, and the large reservoirs which are necessary to flow the rice fields, and which are highly important? It is admitted by Dr. Caldwell, that rice culture is not suited to the healthiness of a country, a fact by no means new, and does he expect that South Carolina will give up this immense source of wealth? This idea is preposterous. It is evident, therefore, so long as rice is cultivated, so long will our lower country be sickly. Now it is known that during the summer and fall months, the negroes are most healthy, while the whites cannot live on rice plantations without early losing their lives or dragging out a miserable existence of disease. In short, while the negro is fat, glossy, and in full health, the white is pale, shrivelled, and dropsical. Many Europeans and northerners have attempted to reside during the summer on plantations as overseers, but have either died, or have had their constitutions broken, and the children who are born in the country, and live all the year on the plantations, are lazy and inactive, because their physical energies are exhausted from continual disease from infancy. They have immense spleens, and are pale and cadaverous, while the negroes who live in the country are infinitely more healthy than those who live in the city, and more so, I do not hazard too much in saying, than any class of labourers in the world.

These facts I defy any one to contradict, and I feel fully warranted in the assertion, that the lower country of South Carolina can never be cultivated by a white population; that it would be to them, under such an attempt, as the Pontine marshes of Italy were to the Italians, and like that once luxuriant spot, studded over with villas and palaces, it would be only the scene of pestilence, poverty, and desolation. It is not my intention to animadvert upon the essay of Dr. Caldwell, but believing it important that so serious an error, coming from such high authority, should be corrected, I have been induced to address the antecedent remarks to you.

Charleston, Sept. 22, 1831.

Notice of a Trial for Infanticide. By JOHN ANDREWS, M. D. (Communicated in a letter to R. E. GRIFFITH, M. D.)—The trial for infanticide, the result of which, in your polite communication of July 20th, you expressed a desire to be informed of, took place last week before the Supreme Court of Ohio, setting in Jefferson County.

I will briefly enumerate the *medical facts*, and give you the professional opinions based upon them, as they were almost the only evidence produced upon the trial.

In June last, the body of an infant female negro was discovered in the vault of the privy upon Mr. H.'s premises. A black woman employed in the family was

charged with being the mother. She at first denied, but afterwards acknowledged the fact, and said it was born the day before, that being a dead child, she did not wish to make a *noise* about it, and had laid it to one side over night, and thrown it into the privy about day-light that morning. This was between eight and nine o'clock, A. M. She was a married woman, had had several children, but she and her husband had been living apart for the last year.

Being removed from the vault, and slightly washed in cold water, the body presented these appearances. The placenta was attached to the umbilical cord, both of which had a perfectly natural appearance. The size of the child was that of one born at maturity; its physical organization, as far as was observed, being also entirely perfect. The head was round, the chest prominent, the abdomen free from tympanitis, and every other evidence of putrefaction. About the anus, there was observed some meconium. On one side of the upper part of the windpipe, there was several, and on the opposite side one curved mark, as if made by the nails of the thumb and fingers of an adult hand. These were confined to the cutis, had no appearance of ecchymosis about them, and were so like to, as to be confounded with an incision in the skin, with the point of a scalpel, *during the examination.*

Over the left malar bone, there was a small contusion, confined to the skin, accompanied with slight ecchymosis, into the cellular membrane beneath. The entire circle might have been covered with a copper. Over the left frontal protuberance, there was a similar contusion accompanied with about the same general appearances. Over the right eye-brow, there was a very small bruise, the size of a dime, free from any marks of *bloody* discolouration. Under the scalp, upon the pericranium, there was an extensive ecchymosis, extending between the fontanelles, and laterally half way down the parietal bones. It was posterior to both the external marks, and having no apparent connexion with or dependance upon them. The dura mater was closely adherent to the under surface of the cranial bones; the venous vessels of the pia mater engorged with blood; the substance of the brain presented no traces of lesion; the examination of the encephalon, however, was by no means so minute as was desirable. Within the trachea, no change of colour in the mucous lining, nor other morbid change, was noticed.

On opening the thorax, its viscera presented a natural aspect. The lungs were reddish; when cut into, dark blood appeared in spots, and might be squeezed from the incision. In cutting through the root of one lung, considerable dark blood ran from the pulmonary vessels. The entire lung, and sections of it, floated lightly upon water of the temperature of the atmosphere in the shade, both before and after compression in the hand. By the mode of opening the thorax, the form of the diaphragm was lost. The abdominal viscera were healthy, and free from the slightest marks of putrefaction; the colon contained some meconium; the bladder was rather softer to the touch than when it has been known to contain urine, but was not examined within. The vena umbilicalis contained a little blood.

Drs. Judkins, Leslie, Dickson, and Andrews, being sworn, testified to the above facts. From them, they had no doubt of the child's having *breathed*; but this might, and did frequently occur, before the delivery even of the head, and was of every day's occurrence, when the head only had passed the os externum, the shoulders and body being retained within the organs of the mother.

As to the question, whether the death of the child was caused by violence? Dr. Judkins was of opinion, that the violence producing the marks upon the head, was sufficient to produce death, which it had done, as he supposed, by concussion of the brain. Dr. Leslie entertained the opinion that death had been produced by strangulation, as he had seen as severe injuries upon the head of a new-born child from the application of the forceps, without causing death.

Drs. Dickson and Andrews, regarded all the morbid appearances as equivocal; that upon the face and os-frontis were evidently the result of force applied

during the life of the child, but even when then made, they were not sufficient to cause death. They exhibited no lesion of any vital-organ. The large ecchymosis might readily occur in the delivery, without any agency on the part of the mother. Cerebral concussion might have taken place, and even caused the death of the child, but this could not be demonstrated. Concussion left no trace behind it. Strangulation was not to be assigned as the cause of death, in the absence of those traces which it leaves upon the body, as we are told, in every case. It was quite possible, in their opinion, for all these marks to have been produced by the attempt of the mother to deliver the body of the child, rendered difficult sometimes by the great size of the shoulders, or the abatement of uterine contraction, occurring singly or together. It is not uncommon for women, in the pangs of labour, to throw their body in many postures, and to attempt to assist themselves by the use of their hands. On the whole, the marks upon the body, they thought, should be looked upon as strongly *suspicious*, but as wanting confirmation from other sources, to make out the murder.

The other evidence brought forward not being pointedly confirmatory, the court stated to the jury that they ought not to convict in a case of this kind without the most unequivocal proofs of guilt, and they did not hesitate to say, in the present case, that the evidence was insufficient to convict.

The Jury acquitted the prisoner.

Steubenville, Ohio, Oct. 1831.

Case of Great Abdominal Disorganization—Death by Apoplexy. By RICHARD D. MOORE, M. D. one of the House Physicians of the Philadelphia Alms-house. —Martin M'Donna, aged thirty-seven years, tall, remarkably pale, and somewhat emaciated, was admitted into the men's medical ward of the Philadelphia Alms-house, on the afternoon of the 14th of October, 1831. He was so much exhausted, that I did not deem it proper to fatigue him by asking any questions regarding the history of his disease, but ordered him to bed, and permitted him to rest, giving him occasionally a drink of wine and water. His friends could give me no satisfactory account of him—they only know that he had been complaining for several months.

I saw him again in a few hours; he had had some sleep, felt more composed, had little or no pain, his skin warm, his pulse a little fuller, but still weak and very compressible, tongue moist and red in the centre, edges pale. I now attempted, but without success, to obtain from him a satisfactory history of his case; he became fatigued, and appeared to be confused in his memory; I could only learn that he had had a dysentery for more than two months, that he had suffered much on going to stool, and sometimes he would be compelled to go as often as thirty times in the twenty-four hours: discharges very small, and occasionally mixed with blood; that he was principally troubled at night. I could learn nothing of the first symptoms: the only object, therefore, I have in drawing up this case, is to represent the manner in which he died, and the post mortem appearances.

7 o'clock, P. M. He was now in much pain; his bowels open every twenty or thirty minutes, discharges very offensive, and consisting of mucous tinged with blood, and a few dark collections resembling slate dust. Ordered injections of mucilage made of *Ulmus americana*, with tinct. opii, grs. xxx. this to be repeated every hour, and every second hour add sulph. zinc. grs. iv.; his abdomen rubbed with vol. linim. every thirty minutes; wine whey every hour, and as a common drink, viz. R. *Ulm. americ.* ʒi.; pulv. g. acac.; pulv. tragac., pulv. salep. aa. ʒi.; sacch. alb. ʒss. Boiling water, a pint; half given every hour.

10 P. M. Easy. Blister to abdomen, extending over the region of the colon.

15th. This morning felt better, and expressed a wish for something to eat; his pulse very weak and small; skin pale, and disposed to be cold; his tongue dry, and his voice feeble. Continued the injections, with increase of tinct. opii, grs. xl.; the discharges not so frequent last night as usual, nor were they so painful. Continue mucilaginous drink and wine whey as before, and a table-

spoonful every two hours of the following:—R. Cret. prep. ℥iii.; tinct. opii, ℥ii.; simp. syrup. ℥ss.; aqua cinna. ℥i.; mucilage acac. ℥iv. 3 o'clock, P. M. Felt a little head-ache, and became drowsy. Ordered warm foot-bath.

16th. This morning no head-ache; his pulse the same as yesterday; face still pale, though some fever, skin being hot and dry; tongue a little moist. Stop wine whey, and continue the treatment of yesterday; bowels opened eight or nine times through the night; pain not so great. 7 P. M. Skin cold; pulse sinking; could not speak aloud. Mustard to extremities, and hot brandy toddy occasionally.

17th. A little better; discharges not so frequent; pulse a little fuller, but weak; skin moist, and warm; tongue moist. Ordered to continue same treatment with a spoonful of the essence of beef every three hours.

18th. Slept tolerably well last night; this morning very weak; discharges increased, or rather the desire to evacuate, the matter discharged very offensive, and of dark watery consistency. Ordered pulv. opii, grs. vi. ft. pil. introduced into rectum. Continue same treatment, suspending the injections until the pill had been discharged. 3 o'clock, P. M. Had an apoplectic fit which continued for fifteen minutes. It returned at 4, or a little after, and he died in a few minutes.

Post mortem examination, twelve hours after death.—*Head.* A good deal of congestion in the scalp, principally venous. Dura matter healthy, but distended on the right side, caused by a coagulation of effused blood between the membrane and the arachnoid, extending from the middle of the frontal bone to the right leg of the lambdoidal suture, and from the petrous portion of the temporal bone to the sagittal suture. This coagulum was near a quarter of an inch thick; the blood, dark venous. Upon a minute examination with the naked eye, no rupture of any vessel could be discovered. The substance of the brain a little congested. The ventricles half filled with bloody serum. The cerebellum and medulla oblongata, healthy.

Thorax. Contents of this cavity healthy.

Abdomen. The peritoneum much thickened, and of a dirty white colour; that portion covering the colon hard, and in some of its folds contained a fluid resembling milk.

Stomach. Mucous membrane thickened, and in places intensely red, particularly the cardiac extremity. Contents of glairy mucus.

The *duodenum* pretty much as the stomach, as regards its colour, but the mucous membrane was not thickened. The small intestine healthy, with the exception of the lower extremity, which was inflamed. Contents yellow, and not quite the consistence of soft soap.

Colon. So entirely changed, as scarcely to be recognised, being in some places half an inch thick, and in others one or two lines more; its feel was hard and indurated, resembling gravel, under the peritoneum. It was opened its whole length; the mucous membrane of the upper portion, about two-thirds, thickened three lines, the remaining third was entirely disorganized, and must have been insensible before death, or nearly so. The upper portion contained ulcers, some as large as a quarter of a dollar, elevated, and of a dark gray colour; smell being offensive; the lower portion of the colon, and the upper portion of the rectum, resembled very much an ulcerated cancer. In dissecting the coats thus thickened, I found several tubercles, having every appearance of recent tubercles of the lungs; some were softened and contained pus.

The *liver* was of the natural size, but tuberculated near its surface, not much injected; gall-bladder filled with bile, very thin, and of a greenish colour; the coats of the bladder healthy.

Spleen. Enlarged to near twice its natural size, softened to the consistency of soft soap.

Pancreas hard, and changed in colour, being darker than natural.

Kidneys and urinary bladder healthy.

Case of Aneurism of the Brachial Artery, cured by Compression. By J. W. HETSTIS, M. D. of Cahawba, Alabama.—On the 27th of August, I was called to visit the wife of M. M. who was represented as having a swelling or rising on the arm, in consequence of bleeding. On arriving, I found that a large and diffused aneurism had formed at the bend of the arm. The tumour occupied a diameter of about three inches, with a projecting pulsating apex, over which the skin was extremely thin, and through which the blood could be distinctly perceived whizzing and thrilling at every pulsation. The pain of the limb was excessive, so that for the last three or four days, sleep had been entirely prevented. The history of the case was as follows:—The woman was in the advanced stage of pregnancy, and to relieve the usual unpleasant symptoms occurring on such occasions, recourse was had to venesection. The operation was performed by a neighbouring farmer, an old gentleman, destitute of scientific knowledge, but whose experience in that line had been considerable, and hitherto successful. The nature of the accident, however, remained unknown; nor, although there was considerable difficulty in stopping the bleeding, was it supposed that any alarming or extraordinary occurrence had taken place. The external orifice healed, and the woman, who was in the lower circumstances of life, resumed her usual domestic occupations, which were rather laborious and fatiguing. In a few days, a throbbing tumour made its appearance at the place where the operation of bleeding had been performed. For several weeks this produced but little uneasiness, and therefore received but little attention. At length, however, from a small, compressible, circumscribed tumour, a diffused hardness and swelling took place, occupying nearly the whole bend of the arm. Great pain and lameness now ensued, and the limb was deprived of the power of muscular exertion.

Such was the situation of the patient when I saw her. I immediately explained the nature of the case and accident, and informed the family of the necessity of an immediate operation. The patient wept and shuddered at the cruel alternative, though had I been urgent, she would have finally submitted. She was within a few days of her confinement, and it was dreaded that an operation at the time might have had an unfavourable effect upon her situation. I therefore told them that there was another, though a doubtful expedient; that no injury could result from its trial, although I apprehended that the case was too far advanced to admit of any permanent relief being obtained in any other manner than by taking up the artery. At least it was hoped that time might be gained, so as to postpone the operation till after the accouchement. The expedient proposed was compression: this was, therefore, acceded to, though on the part of the husband with the apprehension, that the expense of another visit, and an operation, must be finally submitted to.

I now proceeded to make compression on the aneurism and brachial artery, in the following manner. I took two twelve and a half cent pieces, and a twenty-five cent piece, and wrapped them in a rag, so as to prevent their slipping. I then made a thick linen compress, and wet it with a solution of sugar of lead; this, with the silver next the tumour, I applied over the aneurism, and secured by a bandage, as in cases of tying the arm after ordinary venesection, but much firmer and more securely, by repeated turns of the bandage above and below the elbow. Having applied the necessary degree of pressure in this manner to the aneurism, I proceeded also to make a degree of compression upon the brachial artery: for this purpose, another thick compress, four or five inches in length, wet with the saturnine solution, was laid along the course of the artery, and bound down with some degree of firmness by numerous turns of a tolerably broad bandage. This last application was for the purpose of diminishing the impetus of blood into the aneurismal tumour. Upon applying my fingers to the radial artery, I found that its strength and force was considerably lessened. I now left the patient, with directions to see that the bandage did not become too loose, and if so, to readjust it with such a degree of tightness as she could endure without much pain. I neither saw nor heard from the patient till the

expiration of a month. I then saw her husband, who expressed many acknowledgments, stating that my directions had been faithfully followed, and with the most fortunate success; that the swelling had almost entirely disappeared; and that the pain of the arm had ceased; that his wife had commenced using her hand, and considered herself almost completely well; although for fear of a return of the aneurism, the bandage was still retained.

I had previously found the efficacy of pressure, in a wound of an artery from bleeding. This happened in my own practice, in the case of a negro woman. The scarlet arterial blood flowed out *per saltum*. With some alarm I was in haste to tie up the arm, which I did with a compress over the wounded vessel in the manner above described. A firm pressure was in this manner applied, until the orifice had healed; which it did in the ordinary time after vesication, without any disposition to the formation of an aneurism.*

The manner in which pressure operates in the cure of aneurism, appears to admit of easy explanation. It has been proved by experiment and observation, that in tying an artery a coagulum of blood is found immediately behind the ligature, filling up the calibre of the artery, so that were the ligature removed after the formation of this coagulum, no hæmorrhage would or could take place. Now in the case of a wound or rupture of an artery, the blood escapes from the vessel, and continues to distend the sheath, and cellular substances surrounding it, forming a coagulum exterior to the wounded artery, but of no avail in preventing the exit of arterial blood. If, however, the force of the blood can be impeded, and its gush from the wounded orifice suppressed, a coagulum is found in the immediate vicinity of the wound, and an opportunity thereby given for the healing of the latter.

Although several cures of compression have been related in cotemporary journals, still such instances are looked upon as extraordinary, and rather accidental, and not sufficient to warrant the practice as being generally applicable and expedient. From the cures, however, that have been effected in this manner, I think we are fully and more than authorized in its employment, in all cases of brachial and popliteal aneurism, or whenever the contiguity of a bone affords sufficient resistance for its application. It is true, that in the hands of ignorance and incompetence, such practice might be productive of serious and dangerous consequences; but for sacrilegious assumption and intrusion, licensed and unlicensed butchery and murder, this advice is not intended; the field of their operation is already sufficiently extensive, without opening new avenues for death.

In the Philadelphia Journal of Medical and Physical Sciences, No. 4, new series, p. 363, the reader may find a variety of ingenious contrivances for making compression in cases of brachial aneurism, by W. B. Fahnestock, M. D. and among others a kind of truss, fitted to the arm with an elastic steel spring, on the principle of the common truss for scrotal hernia. Dr. F. reports a case of brachial aneurism successfully treated by the application and use of this machine. A contrivance of this kind may be found advantageous, although I have experienced no difficulty in retaining to its place, and with sufficient accuracy and firmness, the common bandage previously mentioned.

Treatment of Ununited Fracture with the Seton.—In a former No. of this Journal, (Vol. VII. p. 267,) we gave a summary of the cases of ununited fracture treated by the seton, to be found in the works within our reach at the moment. Our valued collaborator, Dr. A. F. VACHE, of New York, writes to us that in addition to the cases there enumerated, Dr. MOTT has treated eleven cases of ununited fracture by that remedy. Of these, three were of the os femoris, three of the tibia, and five of the humerus. In all of these it succeeded

* We have had a case entirely similar to this; and after much consideration we have been led to doubt, from the result, whether the artery was actually wounded—the only evidence being the colour of the blood and its flowing *per saltum*. The patient was suffering extreme agony from rheumatism of the heart, and in that disease it is not, we suspect, very uncommon, when a vein is opened, for the blood to exhibit the arterial colour and to flow *per saltum*.—Ed.

perfectly, except in three of the last mentioned, and which were afterwards cured by sawing off the ends of the bone.

We have also recently met with, in the seventh volume of the New England Medical Journal, an account of a case of ununited fracture of the humerus, successfully treated by the seton, by ROBERT THAXTER.

Operation of Lithotomy.—This operation has been performed on the venerable Chief Justice of the United States, by Professor PHYSICK, with his usual skill. The operation was somewhat protracted, from the immense number of calculi, between eight hundred and one thousand, contained in the bladder. These calculi varied in size from that of a pea to that of a pin's head. We are happy to announce that at the present moment, two weeks since the operation, the patient is doing extremely well, and there is every prospect of his valuable life being prolonged many years. We have been promised the details of the case for a future number.

Goupil's Exposition of the Principles of the New Medical Doctrines.—We congratulate the profession on the appearance of Dr. NOTT's translation of this work. A review of the original will be found in Vol. VIII. p. 156, et seq.

On Baths and Mineral Waters.—An elaborate work on baths and mineral waters, by Dr. JOHN BELL, has just been published. We received the work too late to be able to do more than just glance at its contents, but we know that the author has paid great attention to the subject, and have no doubt that he has collected a large amount of valuable and interesting information in relation to it.

Dr. Peixotto's Address.—We have read with great pleasure the address delivered before the Medical Society of the city and county of New York, on the 25th of July, 1831, by D. L. M. PEIXOTTO, M. D. President of the Society. The learned author gives an interesting though brief sketch of the medical history of the state of New York, and offers some judicious suggestions for the improvement of the condition of the medical profession.

Faraday's Chemical Manipulation.—An edition of this work, with notes and additions by Dr. J. K. MITCHELL, has just been issued by Messrs. Carey & Lea. We have met with no other work containing such a mass of useful information on the practice of experimental chemistry. It is an invaluable laboratory companion.

Essays on the Materia Medica.—Mr. G. W. CARPENTER having been frequently called upon by his medical friends for copies of his papers published in the Philadelphia Journal of the Medical and Physical Sciences and in this Journal, has been induced to republish them, with an account of the new proximate principles, the popular remedies lately introduced into practice, the formulae for their preparation, &c. &c. The whole are comprised in a small volume, which will no doubt be an acceptable present to the country practitioner.

Louis on Gastro-Enteritis.—Dr. F. M. ROBERTSON, of Augusta, Georgia, has in preparation a translation of this interesting work.

University of Pennsylvania.—At an adjourned meeting of the trustees, held October 21, 1831, the following report was made, and the resolution attached thereto adopted, with instructions to the secretary to communicate a copy of the same to Professor Physick, and to the medical faculty.

University of Pennsylvania, 21st October, 1831.

The committee to whom was referred, on the 14th inst. the resolutions of the medical faculty, respecting the resignation of Professor Physick, fully coinciding with the views and feelings expressed by the faculty, beg leave to recommend to the board of trustees the adoption of the following resolution:—

Resolved, that in consideration of the important services rendered to the Medical Department of the University by Professor PHILIP SYNG PHYSICK, in the chair of Surgery as well as of Anatomy, during a period of twenty-six years, and for the purpose of continuing his connexion with the school, to the fame and usefulness of which he has so largely contributed, there be conferred on the said PHILIP SYNG PHYSICK, the honorary appointment of Emeritus Professor of Surgery and Anatomy in this University.

From the minutes.

(Signed,)

JAMES C. BIDDLE, *Secretary, &c.*

Boylston Medical Prize Questions.—The Boylston Medical Committee of Harvard University, give notice that the following Prize Questions for the year 1832, are before the public, viz.

1st. "What is the cause of Fistula Lachrymalis, and what is the best mode of treating the disease?"

2d. "What are the circumstances in which the drinking of cold water in hot weather proves injurious? What are the diseases which arise from this cause, and what is the best mode of treating these diseases?"

Dissertations on these subjects must be transmitted, post paid, to JOHN C. WARREN, M. D. Boston, on or before the first Wednesday of April, 1832.

The following questions are now offered for the year 1833, viz.

3d. "The History of the Autumnal Diseases of New England."

4th. "What insects of the United States, and particularly in the northern part, are capable of inflicting poisonous wounds? The phenomena of such wounds, and the best mode of remedying their ill consequences?"

Dissertations on these subjects must be transmitted as above, on or before the first Wednesday of April, 1833.

The author of the successful Dissertation on either of the above subjects, will be entitled to Fifty Dollars, or a Gold Medal of that value, at his option.

Each Dissertation must be accompanied with a sealed packet, on which shall be written some device or sentence, and within shall be enclosed the author's name and place of residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

All unsuccessful dissertations are deposited with the secretary, from whom they may be obtained if called for within one year after they are received.

By an order adopted in the year 1826, the Secretary was directed to publish annually the following votes, viz.

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which the premiums may be adjudged.

2d. That in case of the publication of a successful dissertation, the author be considered as bound to print the above vote in connexion therewith.

Boston, August 10th, 1831.

GEO. HAYWARD, *Secretary.*

Medical College of South Carolina.—Dr. E. GEDDINGS has been elected Professor of Pathology in this institution, and Dr. WAGNER Professor of Surgery, in the room of Dr. RAMSAY, resigned.

University of Maryland.—Dr. T. H. WRIGHT has resigned the Professorship of Anatomy in the medical department of this university, and Dr. E. GEDDINGS of Charleston has been elected to fill that chair.

QUARTERLY MEDICAL ADVERTISER.

IN consequence of the extended circulation of the AMERICAN JOURNAL OF THE MEDICAL SCIENCES, the Proprietors intend, in compliance with the wishes of many of their Friends, to increase the facilities for advertising, hitherto possessed by it. For this purpose, a Sheet of Advertisements will be affixed to the succeeding Numbers of the Journal. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to CAREY & LEA, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz. on 10th July, 10th October, 10th January, and 10th April.

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Philadelphia, January 20, 1830.

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MEDICAL SCIENCES.

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TO READERS AND CORRESPONDENTS.

Professor MOTT's and Drs. HALL and HOPKINSON's communications will be inserted in our next. Other communications have been received, and are under consideration.

The following works have been received:—

Lithographic plate of the Cerebro-spinal Axis of Man, with the Origin and first Division of its Nerves, with explanations. From the French of M. MANEC, M. D. P. Lecturer on Anatomy and Operative Surgery, &c. at Paris. Translated and revised by J. PANCOAST, M. D. (From Mr. P. Ancora.)

A Discourse on the Epidemic Cholera Morbus of Europe and Asia; delivered as an Introductory Lecture, at the College of Physicians and Surgeons in the City of New York, Nov. 9, 1831. By JOSEPH MATHER SMITH, M. D. Professor of the Theory and Practice of Physic and Clinical Medicine. New York, 1831. (From the author.)

The Book of Analysis, or a New Method of Experience, whereby the induction of the Novum Organon is made easy of application to Medicine, Physiology, Meteorology, and Natural History; to Statistics, Political Economy, Metaphysics, and the more complex departments of Knowledge. By TWEEDY JOHN TONN, M. D. of the Royal College of Physicians of London, &c. &c. London, 1831. (From the author.)

Papers relative to the disease called Cholera Spasmodica in India, now prevailing in the North of Europe. Printed by authority of the Lords of his Majesty's most honourable Privy Council. London, 1831. (From Dr. James Clark.)

H. M. J. DESREILLES Doctor's der Medicin, Wundarzte am Militairhospitale für den Unterricht zu Val-de-Grace, Mitgleides der Medicin. Nacheiferungsgesellschaft zu Paris, der Societät der Wissenschaften, des Ackerbaues un der Künste zu Lille, zu Metz und Rennes, Abhandlung über den Keichhus-ten nach den Grundsätzen der physiologischen Lehre verfasst. Eine von der medicin. praktischen Gesellschaft zu Paris am 26. August 1826 gekrönte Schrift. Aus dem Französischen übersetzt und mit Anmerkungen begleitet von GERHARD VON DEM BUSCH, Doctor der Medicin und Chirurgie, ausubendem Arzte zu Bremen, der medicinisch-chirurgischen Gesellschaft zu Philadelphia, der Gesellschaft schwedischer Arzte zu Stockholm, und der Jenner'schen Gesellschaft zu London Ehrenmitglieder und Mitglieder. (From Dr. Busch.)

Der epidemische Brechdurchfall, beobachtet zu Nishni-Nowgorod, von J. G. Lindgren, Dr. Med. (From Dr. Busch.)

Medicinisch-Chirurgische Zeitung, for April and May, 1831. (From Dr. Von dem Busch.)

Journal der Chirurgie und Augen-Heilkunde. Herausgegeben von C. F.

V. GRAEFE and PH. V. WALTHER. Band XIV, Heft 4, und Band XV, Heft 1, 2, and 4. (In exchange.)

Heidelberger Klinische Annalen. Band VII. Heft 1 and 2. (In exchange.)

Litterarische Annalen der gesammten Heilkunde. Herausgegeben von J. F. C. HECKER. December, 1830, and January, February, March, April, May, and June, 1831. (In exchange.)

Bibliothek for Læger, for 1830, and No. I. for 1831. (In exchange.)

Archives Générales de Médecine, for August, September, and October, 1831. (In exchange.)

Annales de la Médecine Physiologique, for June and July, 1831. (In exchange.)

Transactions Médicales, for August and October, 1831. (In exchange.)

Revue Médicale, for August, September, and October, 1831. (In exchange.)

Journal de Chimie Médicale, de Pharmacie, et de Toxicologie, for September, October, and November, 1831. (In exchange.)

Journal Hebdomadaire, for August, September, and October, 1831. (In exchange.)

Gazette Médicale, for September, October, and November, 1831. (In exchange.)

Bulletin des Sciences Médicales, February, March, 1831. (In exchange.)

The London Medical and Surgical Journal, for September and October, 1831. (In exchange.)

The London Medical and Physical Journal, for September and October, 1831. (In exchange.)

The Medico-Chirurgical Review, for October, 1831. (In exchange.)

The London Medical Gazette, for September, 1831. (In exchange.)

For the gratification of our contributors, we present references to the works, received during the last three months, in which their communications are noticed.

Professor PRYICK's Case of Obstinate Cough cured by Excision of the Uvula, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor CHAPMAN's Thoughts on the Pathology of Icterus, his Anomalous Cases of Dropsy, his Remarks on the influence of Mercury in the production of Liver Complaints, and his Observations on the use of Tobacco in Croup, are noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor DEWEES's paper on Ergot, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor MOTT's Case of Ligature of the Carotid for Aneurism of the Arteria Innominata, is noticed in the Bibliothek for Læger, No. 3, 1830; his Case showing the State of the Circulation of the Head after one Carotid is tied, and his Case of Axillary Aneurism, are noticed in the Archives Générales, for Oc-

tober last; and his Case of Ligature of the Common Iliac, is noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Professor HÜRNER's Case of Ozena is copied in the *Bulletin des Sciences Médicales*, for February last; his Experiments on the Mucous Membranes, and his Observations on some points of Pathology, are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Professor MUSSEY's Case of Aneurism by Anastomosis, is noticed in the *Bulletin des Sciences Médicales*, for February last, and in the *Bibliothek for Læger*, No. 3, 1830.

Dr. JACKSON's Alms-house Reports are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. JACKSON's paper on Rhubarb in Hæmorrhoids, is noticed in the *Bulletin des Sciences Médicales*, for February last; and his Observations on Mercurial Inhalations, are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. RANDOLPH's Case of Amputation of the Lower Jaw, is noticed in the *Bibliothek for Læger*, Nos. 2 and 4, 1830.

Dr. MITCHELL's memoir on Rheumatism, is noticed in the *London Medical and Physical Journal* and *London Medical and Surgical Journal*, for September last, and in the *London Medical Gazette*, for October last.

Dr. PEIRCE's Case of Cancer is noticed in the *London Medical and Surgical Journal*, for September last.

Dr. LEHMAN's Case of Spontaneous Luxation of Humerus, is noticed in the *Bibliothek for Læger*, No. 2, 1830, and in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. FAHNESTOCK's Remarks on the use of Rhus Glabrum in Mercurial Salivation, are noticed in the *Bibliothek for Læger*, No. 2, 1830; and his Observations on the use of Compound Tincture of Benzoin in Burns, are noticed in the *Bulletin des Sciences Médicales*, for February last.

Dr. GAYLORD's Case of Intussusception is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. STRACHAN's Case of Extirpation of Scirrhous Cervix Uteri, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. SYMONS's Case of Fungous Hæmatodes cured by Pyroligneous Acid, is copied in *Gräfe and Walther's Journal*, No. 4, Vol. XIV.

Dr. WARE's Case of Sea-sickness, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. MOORE's Case of United Twins, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. HENDERSON's Case of Diseased Bones cured by Arsenic, is noticed in the *Bulletin des Sciences Médicales*, for February last.

Dr. FATST's Observations on Endosmose and Exosmose, are noticed in the *Bulletin des Sciences Médicales*, for March last.

Dr. EMERSON'S Medical Statistics of Philadelphia, are noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Dr. WHITE'S Case of Ligature of the Internal Iliac, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Dr. IVES'S Case of Poisoning by Cantharides, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Dr. HOSACK'S Remarks on the various methods employed for the Removal of the Tonsils, are noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Dr. WASHINGTON'S Case of Gun-shot Wound, Dr. MOORE'S Remarks on the efficacy of Volatile Alkali in cases of Snake bites, Dr. MOULTRIE'S Observations on the Lymph, Dr. PENDLETON'S paper on Superfætation, and Dr. COXE'S article on the Use of the Capsulæ Renales, are noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Dr. GREEN'S Cases of Fractured Liver are noticed in the Bibliothek for Læger, No. 3, 1830.

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY & LEA, Philadelphia, for the Editor of the American Journal of the Medical Sciences," or may be deposited with Professor J. C. WARREN, M. D. Boston—C. DRAKE, M. D. New York, or Professor S. H. DICKSON, M. D. Charleston, S. C.

All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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- Sketches of the most Prevalent Diseases of India; comprising a Treatise on the Epidemic Cholera of the East, &c. &c. By James Annesley, Esq. Madras Medical Establishment, &c. &c. &c. Second edition, London, 1831. With a map.
- Treatise on Cholera Asphyxia or Epidemic Cholera, as it appeared in Asia, and more recently in Europe. By George Hamilton Bell, Fellow of the Royal College of Surgeons, Edinburgh, late Residency Surgeon, Tanjore. Edinburgh and London, 1831, pp. 150, 8vo. With a map.
- A History of the Contagious Cholera, with Facts explanatory of its Origin and Laws, and a Rational Method of Cure. By James Kennedy, Member of the Royal College of Surgeons. London, pp. 291. With two maps.
- Quelques Réflexions sur le Choléra Morbus. Par le Dr. Jaehnichen, Membre du Conseil temporaire de Medecine de Moscou. Moscow, 1831.
- History of the Epidemic Spasmodic Cholera of Russia; including a Copious Account of the Disease which has prevailed in India, and which has travelled under that name from Asia into Europe. Illustrated by numerous Official and other Documents, explanatory of the Nature, Treatment, and Prevention of the Malady. By Bisset Hawkins, M. D. &c. London, 1831, pp. 306. With a map - - - - - 441

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- XII. A Short Tract on the Formation of Tumours, and the Peculiarities that are met with in the Structure of those that have become Cancerous; with their Mode of Treatment. By Sir Everard Home, Bart. &c. &c. 8vo. pp. 98, with several plates. Sept. 1830 - - - - - 488
- XIII. A Treatise on Physiology applied to Pathology. By F. J. V. Broussais, M. D. &c. &c. &c. Translated from the French, by John Bell, M. D. &c. &c. and Rene La Roche, M. D. &c. &c. Third American edition, with notes and a copious appendix, 8vo. pp. 666. Philadelphia, Carey & Lea - - - - - 494
- XIV. Handbuch der Anatomie des Menschlichen Körpers. Von Dr. Anton Romer, Sr. k. k. apostol. Majestät Rathe, Stabsfeldarzte, ordentlichem, öffentlichem, Professor der Anatomie an der k. k. Medicinisch-chirurgischen Josephs-Akademie, &c. &c. &c. Erster Band. pp. 308. Wien, 1831.
- Manual of Human Anatomy. By Dr. Anton Romer, Professor of Anatomy in the Imperial Joseph's Medico-chirurgical Academy, &c. &c. Vol. I. Vienna, 1831 - - - - - 497

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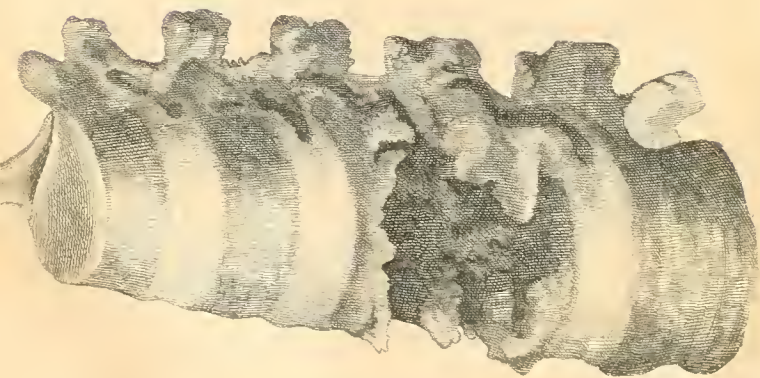
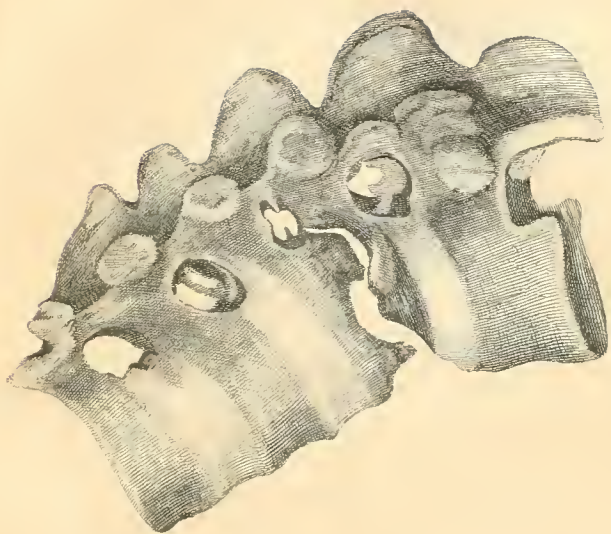
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ART. I. *Remarks on the Autumnal Remitting Fever, as it appeared in Dallas County, Alabama, in the months of September and October, 1831.* By J. WIGGINS HEUSTIS, M. D.

AFTER a winter of unusual severity, spring at length returned, though tardy. The earth had been greatly chilled by the severity of the frost, so that it was late in May before the commencement of warm weather. Parts of June and August, and the whole of July, were unusually dry, and vegetation of every description was much injured by the severity of the drought, which was more sensibly felt in consequence of the plentiful supply of rain that had previously fallen, which, filling to exuberance with sap the growing plants, caused a proportionable degree of suffering, from a sudden suspension of their necessary aliment.

About the first of August the sun presented an unusual appearance, which was observed throughout the United States, and perhaps elsewhere. Soon after rising, and just before sitting, its aspect was singularly striking, being clear and pale, of a bluish-green complexion, much like a well-burnished pewter dish. Its beams, even at noonday, were peculiarly faint and pale; and, as cast upon the floor through a door or window, of a sickly blue and greenish hue. This phenomenon appears to have been owing to an unusual accumulation of vapour in the atmosphere. The most satisfactory explanation of this circumstance is contained in a communication from BENJAMIN HALLOWELL, of Alexandria, Va. dated August 20th, 1831, and published in the National Intelligencer of the 24th. As the phenomenon is of a rare and interesting character, and as being perhaps in some essential degree connected with the peculiarity of the season, and the salubrity and insalubrity of the

atmosphere, I take the liberty of transcribing the explanation in the language of Mr. Hallowell himself, which is as follows:—

“ To understand the phenomena alluded to, it will be necessary to make a few preliminary observations. During the great total eclipse of the sun that had recently taken place, the moon had just passed its perigee, or that point of its orbit nearest the earth, and consequently the combined action of the sun and moon upon the atmosphere produced a great tide in the equatorial regions, and diminished the pressure of the air upon the whole surface of the earth.* This diminution of pressure upon the surface of the water would occasion a great increase of evaporation, particularly when united with the high temperature that accompanied it. For it is an established fact, that the amount of evaporation from an insulated surface of water depends upon the elevation of temperature and diminution of pressure. A vast quantity of vapour thus raised was very observable on the evening of the twelfth instant, at a considerable elevation in the western part of the heavens, and continued to reflect a very red light for a long time after the sun had set. The appearance of the heavens on the morning of the thirteenth I did not observe, but about mid-day, the sun shining through this body of vapour had a silvery appearance, similar to that which it wears when shining through a vanishing fog; and I observed it to give an unusually ghastly appearance to the countenances of persons. Between three and four o'clock, the position of the sun with respect to this body of vapour becoming changed, it assumed a greenish-blue appearance, precisely similar to that produced by the following experiment, and which, in my opinion, was dependent upon the same cause. Let a screen, upon which the spectrum produced by the separation of the solar beam into its primitive colours by a glass prism is thrown, be perforated so as to let all except the red ray fall upon a double convex lens, and be converged to a focus, the result will be a representation of the sun of a greenish-blue colour, exactly such as it was observed to have at the time alluded to. The colour is that resulting from a combination of all the primitive colours except the red, and is denominated in optics the *opposite colour*. * * * The greenish-blue colour of the sun, then, I think, depended upon the red rays being reflected by the intervening body of vapour, while the other six passed to the eye, and produced the observed appearance. This opinion was strengthened by one or two facts observed at the time. I passed the sun's rays through a prism, and while the yellow, green, blue, indigo, and violet colours appeared with their appropriate brightness, the orange was considerably less distinct, and the red made less than the orange. Another corroborative fact was, that as the sun descended below the body of vapour, which was about fifteen or twenty minutes before its setting, the vapour reflected an intensely red light; the light that passed through it was, therefore, separate from the red, and would have produced the opposite, or greenish-blue appearance. The spot that was observed is by no means an

* It is evident, that as the air is partially supported by the combined attraction of the sun and moon, its pressure upon the earth must be diminished. The greatest effect would not be at the immediate time of conjunction, but some days after.

unusual thing upon the sun's disc. It was visible to the unprotected eye, merely in consequence of the diminished brightness of the sun. By aid of a telescope, a considerable number of spots were visible. In the summer of 1816, a spot was visible to the naked eye for eight or ten days in succession."

To whatever atmospheric phenomena and planetary influence it may be ascribed, such was the fact, that from about the twelfth of August to the third of September there fell an unprecedented quantity of rain. During almost the whole of this time the heavens were overcast with low-hung, lowering, and billowy clouds, that daily precipitated immense and overwhelming showers. Nature appeared to have undergone a complete revolution—a singularity and change unknown to the oldest inhabitants. Notwithstanding the heat of the weather, the rapidity of the evaporation, and the vast expenditure of moisture in the support and growth of vegetation, such was the surplus of water that the rivers rose and overflowed their banks, inundating the low grounds, and doing considerable injury to the crops: this was more especially the case in Georgia and the Carolinas, where great damage was sustained from the destruction of bridges and other property. The town of Augusta, in Georgia, was partially inundated, and was subsequently visited with an alarming degree and prevalence of sickness. The town of Tuscaloosa, in this state, also suffered greatly from a visitation of the autumnal endemic. Many towns, however, near the rivers, escaped almost entirely; of which, Cahaba was one; whilst places more remotely situated from the water-courses were subject to disease. This difference was owing to local peculiarities; for wherever the rain water formed ponds, and became stagnant, or met with a rich and fermenting alluvion, febrile miasmata were rapidly evolved, and diffusing their poison through the ambient atmosphere, became the cause of disease to such as were constantly exposed to them. I say constantly, for a transient exposure to, and continuance in those infected places, was not sufficient to originate the disease. And, indeed, very few persons visiting them, and remaining all night, were subsequently affected with fevers; and but a small proportion of the residents themselves became the subjects of disease.

The miasmata, or materies morbi, inhaled with the atmospheric air, and received into the system through the medium of respiration, doubtless existed in all who were exposed to it as the predisposing cause of fever; but, in most cases, required the additional aid of some debilitating agent to excite it into action, or to render the system susceptible to its morbid influence. As long as the various functions were performed with regularity, the resources of nature were suffi-

cient for all the purposes of health; but when the regularity of custom and habit were infringed upon and deranged by any error in the non naturals, or when the constitution was peculiarly susceptible, disease was liable to ensue.

The fever was mostly of the double tertian character, with paroxysms often protracted, and running into each other without any distinct intermission. In other instances, the single tertian type prevailed, but of greater severity than the ordinary fever and ague. In most cases the sensation of chilliness was slight, and after the first paroxysm almost imperceptible. In some, however, the disease was ushered in with a severe ague. In the majority of cases the patients complained of great pain in the head and back. The pulse was rarely full and strong, often hard and frequent, and in many cases small, weak, and easily compressible; and in persons advanced in life, intermitting, more especially under the operation of evacuates. The pain of the head was confined more especially to the forehead, where it was often distressing; becoming more aggravated during the exacerbation of the fever. But notwithstanding the severity of the pains in the head and back, the cases in general did not admit of the free and liberal extraction of blood.

The fever this season was of the congestive character, with a great disposition to an unequal distribution of febrile action and development. In many cases the head, and particularly the extremities, would be cold, while the trunk was hot; whilst at the same time there was considerable palpitation of heart, with a pulse small, weak, and frequent. In such cases I have known dangerous, and even fatal mistakes committed. This weakness of pulse and coldness of the extremities having been looked upon as circumstances of febrile remission, quinine has been exhibited and persevered in; but so far from putting a stop to the progress, or mitigating the disease, the symptoms have become more and more aggravated; the breathing short, anxious, and laborious, and interrupted with frequent sighing; the pulse, instead of becoming stronger, was rendered still more weak and frequent: the sighing and restlessness more urgent; and life was finally extinguished from over-stimulation.

Sickness, restlessness, and feelings of general distress were often the only, or the principal symptoms by which an accession or recurrence of fever could be ascertained. In other cases a weak and hurried pulse would be accompanied with an evolution of general increased temperature, with heat and dryness in the palms of the hands and soles of the feet, and an aggravation of pain in the head and back.

Sometimes after a transient state of febrile excitation, collapse

took place at an early stage of the disease, with little impairment of the general powers of the system; this was more especially the case where depletion had been too freely practised. It is necessary to make a distinction between this state of prostration and that which takes place at a more advanced period. The first is generally remediable, the second is not: in the former the prostration and collapse are for the most part confined to the vascular system, while such is the strength of the muscles of locomotion, that the patient is able to rise and sit up, and even to walk about. This disparity of strength and power between the two sets of organs also sometimes exists in the collapse which takes place towards the termination of the higher grades of bilious fever; and the more malignant the disease, the sooner is this state liable to ensue. This appears to admit of an easy explanation, on the presumption that as the fluids of the body are primarily contaminated, the strength and vitality of the heart and blood-vessels are sooner overpowered and subdued by the deadly poison that has been received into them. I have at this time, (Nov. 3d, 1831,) under my care a gentleman and his daughter, exemplifying this diversity of febrile action: in the man the heat and febrile development are general; in the child there is a great proneness to coldness of the extremities, with a weak, faltering, and almost imperceptible pulse. For the purpose of opening the bowels of the latter, I prescribed a moderate dose of calomel. After this had operated she was much relieved. * * Since writing the above the child has died. I had directed quinine to be given to her through the day, as she appeared to be quite free from fever, in order to resist the tendency to prostration. Under this treatment she improved. But a relative of the child, on the evening of the 3d, apprehending that the fever had returned, discontinued the quinine and administered a dose of castor oil. This I learnt on my arrival late the same evening. I did not think that her situation authorized its employment. The ensuing day, Nov. 4th, she became sick at the stomach, with a disposition to vomit. The relative of the child above referred to, endeavoured to encourage this by exhibiting a solution of tartar emetic, in broken doses; it failed, however, to have the desired effect. No vomiting was produced by it, but a cold clammy sweat broke out and exuded profusely from every pore. She became cold as marble, complaining at the same time of great heat. Arriving late the same evening I found her extremely restless, without pulse, clay-like, and dying, another victim to the administration of tartar emetic. So many instances have I known of like effects from the use of this dangerous article, that it is now several years since I have employed it as an emetic. The case above-mentioned, however, was

one probably of great malignancy; for previously to the administration of the tartar emetic she had vomited matter of a black and sooty appearance, and the whole vital system appeared to be greatly oppressed and overpowered. Besides, the dangerous illness of, and the absorbing interest for the father, caused the case of the child to be overlooked and disregarded by the family, considering it nothing more than a slight indisposition to which she was subject, until several days had elapsed, when she was found in the situation before described. The mother of the child, a woman of plain good sense, sententially remarked to me afterwards, "I have done with pukes."

It generally happens that our autumnal fever ceases as an epidemic about the 10th of October; yet the sporadic cases that occur subsequent to that time are of a more obstinate and malignant character.

Early in the season the discharges from the bowels were mostly of a light clay-coloured complexion, with very little black, green, or bilious discolouration, so generally remarkable in our autumnal epidemics. In the few sporadic cases, however, that occurred after the commencement of cool weather, the stools were highly coloured, of a dark green, olive, and almost black; becoming in the progress of the complaint, of a lighter hue, between an olive and a brown, and of a gelatinous, sleek, and oily appearance; but in no case peculiarly offensive. In one patient the stools were thin, watery, and of a sanguinolent, purplish hue, proceeding probably from a rupture of some small blood-vessels of the rectum or colon, occasioned by overaction and morbid stimulation of the bowels, an appearance I have several times observed. It is not, however, generally a dangerous prognostic, and may be removed by anodyne injections.

With the exception of the little girl alluded to before, only two persons have died within the sphere of my practice this season, and those were in a moribund state when I was called in, and expired in a few hours from the time I saw them. Both had been sick several days. One was an aged lady. The other a young married woman: the cold sweat of death was on her when I arrived at her residence; the face was cold and livid, the pulse tremulous and weak, and the whole system rapidly sinking; the taper of vitality was fast decaying, nor could it be revived by all the resources and remedies that were employed.

To these observations I beg leave to subjoin a few practical remarks. In a great proportion of cases the physician was never consulted; in others, medical advice was obtained, and the friends or family administered their own medicine; in others again, the physician

was applied to for medicine and advice, and in a few of the more desperate only was his attendance required.

It was seldom that I was called in at an early stage of the disease. Domestic skill was generally resorted to in the first instance, which failing, the physician was applied to as a dernier resort. Emetics or cathartics, or probably both, had already been employed, and probably to too great an extent; so that the stomach and bowels being already in a state of commotion, and the patient frequently harassed with watery discharges by vomiting and stool, it became necessary to allay these inordinate actions.

As in former years, so in this, much injury was often done by the exhibition of tartar emetic; fortunately, however, the remedy is now, I believe, generally laid aside; though a few physicians still continuing to use it, cause it to keep up a limited credit and employment. The time, however, I trust and believe is not far distant, when this poisonous and dangerous article, as an emetic, will be discarded from among the medicines employed in the treatment of the autumnal fevers of our climate. When given even in doses of a few grains, I have known it to produce sudden, dangerous, and fatal collapses, and a persisting and uncontrollable catharsis, in consequence of the erythema and irritation excited in the mucous surface of the stomach and intestines. Given in minute quantities it is still valuable as a diaphoretic, the only manner and purpose in and for which I exhibit it.

I administered but one emetic this season, and that rather in compliance with the wishes and prejudices of the patient, than from my own views of its utility. It was a case, however, of chill and fever, of rather a mild and intermitting type, and little danger was therefore apprehended from the operation of a mild emetic. To use his own language, *as he wished something to turn it down after it had vomited him sufficiently*, I added to the ipecacuanha a sufficient quantity of jalap. The patient not being satisfied with the first exhibition, I repeated the dose, which, aided by copious draughts of warm water, acted effectually both as an emetic and cathartic. He remarked that he had taken ipecacuanha before, but never any that had operated so roughly. The fever subsiding with the operation of the medicine, left him in a situation to take quinine; about thirty grains of which restored him to his usual health. I had previously remarked, while in Florida, in 1818, the efficacy of emetico-cathartics in breaking up morbid associations, and putting a sudden check to fever if exhibited in an early stage of the disease. The articles I made use of were ipecacuanha, calomel, and jalap. In a great majority of

cases the fever was in this manner suddenly cut short by a single dose of medicine. For the same purpose the owners of slaves in this country are in the habit of giving to their negroes at the first announcement of disease, salts and tartar emetic combined. But it is seldom in country practice that the physician sees the patient sufficiently early to admit of this mode of treatment with any degree of safety. In a preceding number of this Journal, I have pointed out the danger of exhibiting tartar emetic, nor have I since had any reason to alter my opinion.

Notwithstanding the severity of the pains in the head and back, the cases in general did not admit of the free and liberal extraction of blood, or it was seldom that the physician saw the patient at a proper season to avail himself of its employment; and for the most part, the loss of four or five ounces was sufficient to produce a reduction and softening of the pulse. If the febrile action was considerable, with much head-ache, as there generally was, and a hot skin, bleeding was highly useful. But the quantity required at any one operation, was small, seldom exceeding eight or ten ounces; if the extraction went much beyond this, there was danger of sinking and alarming prostration. In this, there was a peculiarity, different from what existed in the fevers of former years, when I have known the pulse to remain firm after the loss of twenty or thirty ounces of blood. In one instance, the too free operation of bleeding had nearly proved fatal. This took place at the commencement of the sickly season, before the character of the epidemic was well understood. The case was that of a young, stout, athletic negro man, full of life and blood, but in whom the arterial action was not in proportion to the habit of body, and the other symptoms of the fever. The pulse, instead of being full and strong, or hard, vibrating, and elastic, was, on the contrary, rather small and contracted, indicating a congestive state of fever. I opened a vein, though on the third day of the disease, and without much alteration of symptoms, permitted the blood to flow until nearly twenty ounces had been extracted. Finding that no disposition to syncope or perspiration was produced, and that the trunk still continued preternaturally warm, I gave him the cold bath, seating him on a chair, and affusing with a small pitcher, about four gallons of cold well water on the naked body. He was now cool, and being conveyed to bed, expressed himself much relieved. I now gave him about twenty grains of calomel, with directions to exhibit a dose of castor oil, should not the calomel operate in the course of three or four hours; I then left him to visit other patients: returning in about three hours, I was startled to find him labouring under a

state of extreme arterial prostration. His system had not reacted from the effects of the cold bath; and the castor oil, which had been exhibited too soon, together with the calomel, had already produced profuse and repeated dejections from the bowels. The extremities were cold, the countenance inanimate, the voice and consciousness nearly extinct, and the pulse thread-like, evanescent, and only perceptible to the most accurate and delicate touch. Without delay I applied blistering plasters to the extremities, made frictions with hot brandy, gave him an anodyne to check the operation on the bowels, and stimulated him with quinine, exhibited every hour; sinapisms and poke root poultices were subsequently applied to the soles of the feet and to the palms of the hands. This case remained critical and doubtful for several days; reaction however ultimately took place, with an accession of fever, which was combated by febrifuges and aperients, and the man recovered. The error in this case consisted in making too full and liberal extraction of blood, without, as yet, being sufficiently acquainted with the character of the epidemic; the paying too little attention to the state of the pulse, which, though the patient was of a strong and athletic habit, did not possess sufficient development and force to authorize the free use of the lancet. Yet, here again I was imposed upon; for, as the patient was bled sitting up, and as no disposition to syncope took place, with but little change of the pulse or other symptoms, the extraction was considered within the bounds of prudence. A second error was, in making too free use of the cold bath; and the third in following up these two Herculean remedies, by exhibiting a twenty grain dose of calomel; the latter, however, might not have been injurious, had it not, contrary to my directions, been succeeded too soon by the exhibition of a large dose of castor oil.

The uncertainty, and the diversified effects from the operation of blood-letting, show the impropriety of trusting this efficient remedy to any other than the hands and discretion of the attending physician. Much danger is to be apprehended from the mechanical operator, who, ignorant of the animal economy, and of the phenomena of health and disease, can have no proper conception of the circumstances, necessities, and changing symptoms of the patient, which govern and regulate the use of this important operation. Nor is it possible for the physician to decide, from the symptoms merely, the effect that may be produced, or the degree to which the extraction of blood should be performed. In the use of the lancet, I have always found it necessary to watch the patient with much care and attention, to ascertain the extent which may be required. Suppose, for instance,

that from the habit and constitution of the patient, and the height of the febrile excitement, the physician should prescribe the loss of twenty ounces of blood, when he would safely bear but ten, the consequence might be fatal. Therefore, while the blood is flowing, the finger, from time to time, should be applied to the artery, to ascertain when a change takes place in the pulse. The feelings of the patient, the countenance, and the state of the skin should also be watched with great circumspection. In the disease of this season, so characterized by unequal and irregular excitement, I sometimes found the best effects from immersing the lower extremities in warm water, and taking a gill or two of blood from the foot whilst thus immersed. From a state of extreme restlessness and distress, I have known the patient, in this manner, in a few minutes become composed and very materially relieved. These small bleedings were repeated as often as the exacerbations of fever, with pain in the head and back, seemed to require them.

In the fever under consideration, the bowels were, for the most part, easily operated on. As a cathartic, when one was required, I gave a preference to calomel and castor oil. To children, and to persons of much gastric irritability, I prescribed an infusion of senna, either alone, or in combination with manna. On many occasions, however, I was under the necessity of exhibiting anodynes to moderate and suspend the undue action, and the too frequent discharges from the bowels. A neglect of proper attention to this circumstance was sometimes productive of dangerous or fatal consequences. I was informed of several cases, in which, from the description, I have no doubt death was occasioned by hypercatharsis, induced by the injudicious exhibition of purgative medicines. In most instances, I found an advantage in the use of enemata, in preference to the exhibition of more active cathartics by the mouth. When the patient became restless, during the paroxysm of a fever, at the same time that the evacuations from the bowels had been for several hours suspended, an enema, composed of a little warm water, or gruel, salt, and molasses, was extremely serviceable in allaying the disquietude, and affording composure to the system; and if repeated a few times, was generally sufficient to empty the bowels effectually. Indeed, after the first dose, I seldom found it necessary to give an active cathartic of any kind during the whole of the subsequent treatment of the disease; and at most a dose or two of Seidlitz powders, aided by the occasional use of cream of tartar, or the compound nitrous powders, to be presently mentioned, was all that was necessary, especially if assisted by enemata, to keep the bowels sufficiently regular and open. Fre-

quent, watery, and pale coloured dejections were debilitating and injurious; these I always endeavoured to suppress, either by anodynes exhibited by the mouth, or more effectually by a tea-spoonful of laudanum given with an injection of a gill or two of warm water or gruel.

As a febrifuge during the paroxysm, whenever there existed too great a degree of constipation, I prescribed cream of tartar and spirit of nitre; when the bowels were too open I directed lemonade. I found however, the most decided benefit from the following:—Sal. nitre, gr. 8, pulv. Doveri, gr. 2, calomel, 2 vel. 3, antimon. tartaresat. gr. $\frac{1}{8}$, Mf. pulv. to be repeated every three hours. This compound I found to operate as a powerful diaphoretic, whilst the small proportion of opium in the Dover's powders allayed nervous irritation, and greatly assisted the other articles. In one instance only did the use of these powders produce salivation, and that in a slight degree; the other cases yielding before a sufficient quantity of mercury had been taken to produce that effect.

Whenever the temperature was high and generally diffused, I found, as in former years, the best effect from the cold bath given by affusion. In distressing and protracted paroxysms, which had perhaps continued thirty-six or forty-eight hours, on arriving and finding a general heat and dryness of the whole surface, pain in the head, and pulse tense and frequent, I have, without delay, directed the affusion of four or five gallons of cold water on the naked body, wiping and conveying the patient to bed; I have then sometimes given, with signal benefit, an anodyne sudorific mixture, composed of a tea-spoonful or two of spirit of nitre, the same quantity of paregoric, of twice the ordinary strength of the Dispensatories, and fifteen or twenty drops of antimonial wine. A warm fluid perspiration, by the use of these means, soon breaks out, which, being rather encouraged by drinking freely of cream of tartar and water, or lemonade. with from ten to fifteen drops of antimonial wine every two hours, leaves the system cool and free from fever, and in a proper situation for taking quinine. When the arterial action is strong and hard, I premise the use of the cold bath by the extraction of a few ounces of blood. When this circumstance has not been attended to, I have known the cold bath administered and repeated with nothing more than temporary relief; the fever in a few minutes developing itself with as great intensity as before. This is more apt to be the case in persons of strong constitutions and sanguine habits, from northern and healthy climates. If, after the first exhibition of the cold bath, it is found that the heat and increased arterial actions soon return, it will be better to have

recourse to venesection, previously to a repetition of the bath, which may then be given, should not the bleeding have had the effect of superseding its necessity with every probability of success.

When the increased temperature was only partial, as was frequently the case, being confined to the head and trunk, whilst the extremities were colder than natural, the general cold bath was not admissible; at least I have never employed it under these circumstances. In such cases cloths wet with cold water were beneficially applied to the head, chest, and abdomen. For this purpose I made use of large towels, or two or three of them together, and folded several times, so as to prevent their becoming too soon heated. These were renewed every fifteen or twenty minutes, or as often as they became warm, until the heat became permanently reduced to the natural standard, or a perspiration made its appearance. This plan is also adviseable in those cases where the general cold bath might be objectionable on account of the existing debility of the patient. When there was an undue accumulation of heat in the extremities, as was not unfrequently the case, great relief and benefit were derived from sponging or wetting them with cold diluted vinegar, or what was preferable, lime juice and water.

With respect to the exhibition and utility of quinine, in cases of well-marked intermitting fever, there is no question; but in the bilious remittent great care and circumspection are required in its employment. The physician is here often compelled to witness from day to day, the wasting ravages of disease slowly or more rapidly undermining the strength and constitution of the patient, without the power of arresting its progress. It seldom happens, however, that a remission more or less considerable, does not take place, at least once in the twenty-four hours; this is known by the reduced hardness and frequency of the pulse, the cessation of head-ache, and the distressing thirst and dryness of the mouth, by a state of comparative ease and composure, and perhaps by the appearance of a perspiration. This, then, is the critical and important period for exhibiting quinine. A perfect apyrexia is not to be expected; but if, as often happens, the quinine produces a perspiration, which it does more effectually if aided by the exhibition of spirit of nitre and antimonial wine, with an infusion of serpentaria or sassafras; if in this manner general perspiration is produced and kept up, we may be satisfied that the exhibition is safe and proper. When the remission is short, lasting no longer perhaps than one or two hours, it becomes necessary to push the remedy with a bold and vigorous hand. Under such circumstances I have often given as many as five grains every

hour, either in substance or solution, until the system has become well charged, which may be known by a sense of fullness of the head, and twitchings and transient sensations of numbness in the muscles of voluntary motion; it then becomes necessary to desist for a few hours, when it may be again renewed in smaller quantities and at more distant intervals, still keeping the system charged for a day or two, until the morbid action shall be completely subdued. During its exhibition the perspiration may be encouraged by the simultaneous exhibition of the remedies above-mentioned. In this way I have often arrested the most dangerous and alarming cases of bilious remittent fever, in which fatal consequences were apprehended from a repetition of the paroxysm. If, however, after one or two exhibitions of this medicine, it should be found that the febrile symptoms become aggravated, without the appearance of perspiration, we must desist from its employment for the present, and watch for a more favourable opportunity. During the exhibition of this powerful tonic, the pulse will possess much of the character of febrile excitement, being quite frequent or rather quick and jerking; but there is at the same time an absence of other febrile symptoms, as thirst, head-ache, a hot and parched skin, &c. This frequency of pulse under the exhibition of quinine in the bilious remittent, is partly the remains of fever, and partly the effect of the medicine employed, and may be considered as the struggle between the disease and its remedy. When this shall have been overcome, the pulse will resume its firm, slow, full, regular, and healthy beat. At the commencement of the disease I have been often foiled in my attempt to exhibit quinine, there being present too great a degree of the inflammatory diathesis. It becomes necessary, therefore, previously to correct this state of the system, by the employment of the usual remedies, as venesection, should the symptoms justify it, cathartics, the cold bath, and other febrifuges. Watching the favourable opportunity for a remission, we may then have recourse to the exhibition of quinine, with a great probability of success. I would here beg leave to remark the frequent complaints and objections made against this valuable article of the materia medica by some respectable physicians, who contend that its virtues have been greatly overrated, and that they have never been sensible of any considerable advantage from its use. Similar objections were at first raised against the parent article, the Peruvian bark itself, and from the same cause, viz. the small and insufficient quantity employed. The cost of this medicine, hitherto, has proved a great bar to its extensive and general employment, especially among the more indigent classes of so-

ciety, and an overstrained economy in the attending physician has caused it to be administered in such minute quantities that it might well be said to be inert and unavailing. Thus, it is thought by many that five grains to the ounce in solution, exhibited in the dose of a tea-spoonful every two hours, is amply sufficient. This would make but little more than half a grain to a dose; scarcely more than the tenth part I have found it expedient and necessary to exhibit, in combating such obstinate and formidable diseases as the intermitting and remitting fevers frequently are.

An objection exists with many physicians against the use of opiates in fever, and it is doubtless true that their indiscriminate exhibition in cases of high arterial action might be productive of injurious effects; this, however, affords no argument against their occasional and judicious exhibition; and I have accordingly found them amongst the most valuable remedies that can be employed. It is often desirable to procure ease and composure, and a respite from the harassing restlessness and vigils of disease. For this purpose I often prescribe at bed time, provided the fever should not be very considerable, a tea-spoonful of paregoric, and the same quantity of spirit of nitre, with fifteen or twenty drops of antimonial wine, to be repeated if necessary. So far from stimulating the arterial system, and aggravating the fever, I have found this prescription one of the most effectual remedies in subduing the remains of febrile restlessness and excitement; which it appears to accomplish by its anodyne power, and by promoting perspiration, which latter property it possesses in a more eminent degree than any other medicine or combination of medicines that I have ever employed.

The disease this season was not generally marked by any considerable irritability of the stomach; yet in those few cases where this took place, blistering the epigastrium was of great service. Abstinence from all kinds of ingesta, either in the form of drink or nourishment was also required. For want of attention to this circumstance, I have known the irritability of the stomach and the vomiting to continue with great obstinacy. It is in vain, under such circumstances, to endeavour to quell the disturbance by carminatives, aromatic infusions, &c.; every article of bulk becomes a cause of offence to the irritable organ, and is sure to be rejected in a few minutes from the time of its reception.

On the morning of the 27th of September I was called to visit A. R. a very large and fat elderly gentleman. I found him with a strong full pulse, and great irritability of the stomach. The strength and fullness of the pulse were rather remarkable, as in persons of much

obesity I have generally remarked it to be small and weak. The person here spoken of, however, was of a strong constitution and industrious and active habits, which might account for the difference. He had been subject to the remitting fever for several days. When I saw him he was labouring under symptoms of cholera. He had great thirst, and such was the weakness and irritability of the stomach that every thing was thrown up almost as soon as it was swallowed, so that the floor of the room where he lay was inundated with the water that he had rejected. I administered a bolus composed of one grain of opium, three grains of camphor, and ten grains of calomel; at the same time I had his stomach well rubbed with hot brandy and laudanum, and then a flannel cloth wet with the same, and applied to the epigastrium. I prohibited the use of both liquids and solids, except in very small quantities. In pursuance of this treatment the stomach soon became composed. In the evening, finding the pulse too full and strong, I took away about sixteen ounces of blood. After the lapse of about eighteen hours I allowed him to chew a little lean boiled ham, and to swallow the juice, which he did with some relish and much benefit; I also permitted him to take from time to time, as his stomach could bear it, two or three tea-spoonsful of strong coffee. Quinine was likewise exhibited every two hours in such quantity as his situation would admit. Under this treatment he rapidly recovered.

In desperate cases it will often be necessary for the physician, in some degree at least, to become also the officiating nurse and constant attendant, as no other person is competent to adjust the treatment to the various changing symptoms and necessities of the disease. In critical circumstances, where life and death stand almost on an equal balance, a slight error is sufficient to turn the scale, to the irretrievable destruction of the patient.

Cahaba, Alabama, Dec. 1831.

ART. II. *Account of the Scarlatina which prevailed in Deerfield, Massachusetts, in the years 1830 and 1831.* By STEPHEN W. WILLIAMS, M. D. late Professor of Medical Jurisprudence in the Berkshire Medical Institution.

IN the years 1830 and 1831 scarlet fever prevailed extensively throughout New England, and in many towns was very mortal. At intervals

it has continued to prevail from June 1830 to this time, Nov. 24th, 1831. The first cases I heard of occurred as early as May, 1830. The winter of this year was not unusually cold. The month of April was remarkably serene and mild; May was cold and uncomfortable; several frosts occurred which cut down the early planted Indian corn. The first cases which occurred in this town were in the latter part of June. A child was brought here from Amherst, where the complaint prevailed, who had considerable canker about the mouth and throat, but who was not supposed to have any thing of the complaint which prevailed there. In two or three days a child who played with this, was attacked with soreness of the throat, canker and fever, which were so slight as not to require medical aid. In about a week, the mother, who was subject to cynanche tonsillaris, was attacked, and sent for me. I found her with high fever, enlarged and inflamed tonsils, and furred tongue. Believing her to have an attack of inflammatory quinsy, I made my prescription for that complaint, and did not see her again for five days. When I next visited her, I found two of her children, a boy of about fourteen, and a girl of about eleven years of age, labouring under the same complaint. They had been sick a day or two. They were attacked with cold chills, succeeded by great heat, inflamed throats, and swelled tonsils, and, at the time I saw them, they complained of great lassitude and depression of strength. Upon examining the tonsils of the mother and children, I found them covered with white specks of ulceration, but still they were so much inflamed that I considered them cases of cynanche tonsillaris, having often seen such specks in inflammatory quinsy, previous to suppuration. In the case of the boy the pulse was very slow, and often preternaturally so. The pulse was smaller and quicker in the other two. On visiting them the next day I found that the sloughs had extended over the palate and fauces, and were more of an ash colour. The difficulty of swallowing was very great, so much so that liquids frequently returned through the nose. In the children there were copious discharges from the nose, of so acrid a character as to excoriate the skin. Restlessness and delirium at night. The complaint ran on a fortnight before the fever subsided, and it was more than a month before their throats were entirely well; indeed, there was great hoarseness and difficulty of swallowing for several months. The ulcers nearly destroyed the palate, and made great ravages with the tonsils, which were very ragged, and resembled honey-comb. I have been rather particular in describing these cases, as many of my subsequent ones were similar to them.

One of the watchers took the complaint from these patients, and

carried it home with her a distance of half a mile, and communicated it to her sister. Few other cases occurred for several weeks in this town, though, it was very prevalent and fatal in some of the neighbouring towns. In several instances the patients were attacked, and died with it in two days. These cases, however, were attended with eruptions, which did not occur in any of the patients I had previously seen.

Ten or a dozen cases of scarlatina occurred in Greenfield, three miles north of this town, but none were fatal. Sore throats were unusually common in this town this season, and many of them terminated in genuine cynanche tonsillaris. In different parts of the town, and at distant intervals, the complaint prevailed, and ran through several families. But one patient died of it in 1830, and he was sick only thirty-six hours. In this case I was told there was a slight eruption, which was the only instance in which it occurred here. I did not see this patient until within three hours previous to its death, and I am not able to give a detail of the treatment.

The measles prevailed in scattered cases, but could hardly be considered epidemic. A few cases of throat distemper occurred here as late as November.

We had no more cases of the complaint till the latter part of January, 1831. I find by my meteorological journal, that the weather up to the 6th of January had been remarkably warm. A part of the time had been very sultry, and the thermometer had been 55° above zero, a temperature for the season unprecedented within the recollection of the oldest inhabitants. After the middle of the month it was very cold, with considerable snow. The thermometer after this was eight different times below zero, once 17° below. February was also cold, there was a good deal of snow on the ground, and the thermometer this month was eight times below zero, and once 17° below. I find the following case of scarlatina in my note-book. On the 28th of February, 1831, a child of L. P. died of canker-rash, aged six. I was called to this child on the afternoon of the 27th, Sunday. It was taken violently sick on the Thursday before with a putrid sore throat, high fever, and scarlet eruptions. The usual common applications were used by the family before I saw it. I found it with an extremely feeble, rapid pulse, throat and mouth filled with very putrid and offensive smelling ulcers, and the skin hot and dry, and covered with scarlet miliary eruptions. The discharges from his mouth and nose were very acrid, and nauseous in the extreme, excoriating the skin wherever they touched. I pronounced the case a hopeless one. I gave it a dose of castor oil, di-

rected an antimonial solution, to use the statice limonium both for a draught and gargle, and to use gargles of a solution of chloride of soda. The next morning before sunrise I was again called to it, but before I arrived the child was a corpse. This is the third case of canker-rash to this date which has proved fatal in this town this year. Many scattering cases have occurred in various parts of the town since last fall. In Conway, and some other of the neighbouring towns, it has been very prevalent and fatal. The complaint this year has generally been attended with an eruption, sometimes of the miliary kind, and sometimes it has appeared in blotches like erysipelas, constituting genuine canker-rash. I was deceived in one case, and supposed it to be genuine erysipelas, as there was but little affection of the throat. Soon other members of the family were attacked with scarlatina, which convinced me that I had made a wrong prognosis. The complaint has, however, assumed all appearances, from the mildest to the most malignant forms. Frequently there would appear a great crop of eruptions without any affection of the throat, and often considerable soreness of the throat and stiffness of the muscles of the neck without any eruptions. I have generally found that where the eruption made its appearance soon after the throat was affected, especially if it was of the miliary kind, and appeared first in the superior parts of the body, and by the third day disappeared at the lower extremities, that my patients recovered better and quicker than when the eruption was four or five days in making its appearance. When this latter state has been the case I have often considered their situation dangerous and alarming, attended with high fever, quick and feeble pulse, and delirium; and where the cases have not been fatal they have been extremely slow in recovering.

There were two fatal cases in March, and one in April. The complaint arrived at its acme in May. In this month there were five deaths—four of them occurred in one day. In one small village, (Cheapside,) almost every child was affected with it, and there were six or seven deaths in rapid succession there from it.

From my note-book I find that scarlet fever, sometimes attended with canker, and sometimes not, continued to prevail to the 13th of June in various parts of the country. The weather from the 29th of May to this time has been unusually and intensely hot for the time of year. The thermometer was over 90° in the shade the two last days of May, and the four first days of June it ranged from 92° to 96°. Up to this time it is very hot and dry. The month of May was very cold and wet, and during this month the canker-rash prevailed

extensively here. As the weather grew milder the cases were numerous, but mild. No death from that or any other complaint occurred in this town from the 16th of May to the 18th of June. From what I can learn, I believe the complaint is, and has been, pretty general throughout a considerable portion of the United States. I have seen an account of its great ravages at Pittsburgh, beyond the Alleghanies, and of its prevalence in Burlington, Vermont.

From the 1st of May to the 1st of October the whooping-cough prevailed here very extensively and severely. No deaths occurred from it. From that time to this, scattering cases of scarlatina occurred—and we have now, November 24th, one or two very severe cases. Since the commencement of sore throat in this town, we have had about two hundred and fifty cases, and sixteen deaths from it. The population of Deerfield is a little more than two thousand. The average number of deaths in this town for the last twenty years has been about twenty a year. This year, up to this time, there have been forty-three deaths—many of them have been from chronic complaints.

Treatment.—In the treatment of this disease I have probably used nothing new. At its commencement, my cases were unquestionably inflammatory quinsy, but they soon terminated in the putrid form of the malady. My first cases were treated with cathartics of calomel, followed with jalap and crem. tartar. ol. ricini, senna, aniseed, and glycyrrh. or with neutral salts. Purgatives have always had a good effect at the commencement, and where they have operated well have obviated the necessity of local or general blood-letting. In a few cases I have prescribed emetics, but have not seen the same benefit from them as from cathartics. After the operation of the latter I have made free use of Dover's powder and calomel, diaphoretics generally, and the antiphlogistic regimen; pediluvium and sinapisms to the feet, and mustard-seed poultices, blisters, vinegar and water, and volatile liniment applied externally to the throat, appeared to lessen local inflammation. Inhalations of the vapour of sage tea and vinegar from the nose of a coffee-pot, gargles of gold-thread, alum and honey, borax, slippery-elm, and solutions of chloride of soda, and decoctions of marsh-rosemary, were beneficially applied to the internal fauces and tonsils. The frequent use of dilute muriatic acid in water was of great service. It is thus prepared:—*R.* Acid. muriat. gtt. xl.; aq. bullient. ℥ss.; mel. coch. mag. 3. I direct the patient to take a large spoonful of it every four hours, and gargle the mouth and throat with it frequently. It has a good tonic

effect in the convalescing stage. This medicine is highly extolled by several English physicians in this complaint. I have used it with much advantage in mercurial sore mouth, and in cases of canker. The decoction of statice limonium $\overline{\text{z}}$ ss. to ℥ ss. of boiling water, a table-spoonful at a dose several times a day, was an excellent tonic and detergent.

To correct the fetor of the breath I made a free use of the chloride of soda, in the proportion of one table-spoonful to ten of water, for a gargle and wash. I also use this medicine extensively in mercurial sore mouths. In the convalescing stage generous diet was resorted to, the sulphate of quinine, bark and wine, decoctions of serpentaria, chamomile, carriage exercise, &c. &c. These were general remedies, which were varied, and others substituted according to the circumstances of the case.

My patients were slow in recovering, and for several weeks many of them had great difficulty in swallowing; liquids returning through the nose, and great hoarseness. I ought not to have omitted to mention the great benefit my patients received from frequent ablution, and sponging the body with vinegar and water in a tepid state when the skin was hot and dry, and the grateful sensations experienced from fomenting the bowels with warm cider brandy.

Secondary affection of Scarlatina.—In numerous cases there have been relapses from scarlatina, and the patients have sunk under dropsical effusions. In most of the secondary affections I have seen, the complaint was originally very mild, and perhaps little thought of at the time. From slight causes, such as taking a little cold, or over-eating, the patient is suddenly taken with universal bloating, and general dropsical effusions. It soon runs on very rapidly, most generally to death. I have seen some cases where the affection has been general from external and internal hydrocephalus, to general anasarca. I have seen the face of one patient so much bloated that he could not see. The warm bath, hydragogue cathartics, and diuretics ultimately restored him. I have also seen patients die from this complaint in the most agonizing distress. In my opinion, in these cases, the patients are too much neglected at the commencement of the complaint. Thorough evacuations should be resorted to, the avoidance of cold and the too free indulgence in eating. Patients in this complaint are very much debilitated. Tonics are urgently required.

CASE.—A child of D. A. aged three years, died of the secondary affection of scarlatina. About a month before this child was slightly

affected with scarlatina, which yielded to common remedies. In about ten days he was attacked with a secondary affection of the complaint, with slight rigors, high fever, a furred tongue, and bloated bowels. These symptoms also yielded, after a while, to purgatives, antiphlogistics, and tonics. After this he was about the house apparently as well as common, for several days, when, in consequence of over-eating, and taking cold, he was severely attacked with high fever, and great tumefaction of the bowels, and a brown, furred tongue. A full course of purgatives, Dover's powder and calomel combined, seemed to have a good effect upon him for several days, and we had expectations of his recovery, when suddenly he was attacked with delirium, stupor, and great distress. The pupils of his eyes did not appear to be affected, and we could not refer his complaint to his brain. The warm bath did not appear to alleviate his complaint. He lived several days and died distressed. We had no examination by dissection—unfortunately a prejudice exists against it in this quarter. About the same time Mr. A. had two other children, severely afflicted with the secondary affection of canker-rash which yielded to purgatives, Dover's powder and calomel.

The secondary affection of canker-rash has been common in the neighbouring towns, as well as this. It is generally fatal, but not invariably so. In one case to which I was called in consultation in Conway, the child appeared to be universally dropsical. Stupor and delirium came on before I saw it, and it was apprehended it would immediately die. It was so œdematous that it could not open its eyes, and it was white like bleached wax. The warm bath brought on reëction before I arrived, and a course of diuretics, purgatives, and tonics, finally restored it. In another case, a child, which had a few weeks before a slight affection of scarlatina, and which soon apparently recovered, in about a fortnight or three weeks after, it was suddenly attacked with fever and universal œdema. Extreme distress very soon followed, and in three days it died in excruciating agony, and the whole body was completely dropsical.

During the prevalence of this complaint it is frequently asked, can nothing be done to prevent it? Various remedies have been used, and the following from the *Journal Complimentaire*, deserves further trial. •• *Belladonna*. The alleged preventive properties of this article in cases of scarlatina induced Dr. VELSEN of Cleves to test its efficacy in an epidemic which prevailed in that place during the past year. The number of those to whom it was administered amounted to 247, of both sexes, and of every age, from infants at the breast, to adults

of forty or fifty years. Two grains of the extract were dissolved in two ounces of distilled water, to which was added two drachms of alcohol, and of this solution five, ten, fifteen, or twenty drops, according to the age of the person, were taken twice a day. The administration of the medicine was continued during the prevalence of the epidemic. Of the 247 who were the subjects of the experiment, thirteen only contracted the disease, and, in them, according to Dr. Velsen, it assumed a milder character than in those who were not submitted to this preventive treatment. The following are the conclusions, which he has drawn from his observations. 1. In the great majority of cases the belladonna is a preventive against scarlet fever. 2. Where it fails to produce this effect, the disease is much milder than in cases where it has not been given. 3. Administered according to the preceding formula it is productive of no unpleasant consequences."

Deerfield, Massachusetts, Nov. 24th, 1831.

ART. III. *Case of Diseased Spine*. By THOMAS SEWALL, M. D. Professor of Anatomy and Physiology in the Columbian College, D. C. [With a Plate.]

THE following case of spinal affection occurred in the infant son of M. E. Hersant, Esq. Consul of France to the United States, a child equally remarkable for the premature development of his mind, the native stamina of his physical constitution, and the patience with which he sustained the extreme sufferings occasioned by a complicated train of morbid affections.

The case did not come under my care until a late period of the disease; I therefore avail myself of the notes which were made by Madam Hersant, and which she has kindly put into my hands for the benefit of the public. I am happy to find her journal of the case so full and circumstantial as to furnish every fact at all material in giving a faithful detail of its history.

Alexander, the little patient in question, was born in March, 1827, and was a healthy, well-formed child. At the age of two weeks, he was severely affected with the thrush, from the consequences of which he did not recover for nearly nine months, but upon the approach of the first winter, his health returned and he became vigorous and ro-

bust. In July following he contracted a catarrhal affection, which left him with a febrile habit, that continued till late in the autumn; and the winter in 1829, found him a great invalid, affected with sleepiness, flushing, fever and diarrhoea, and this state continued till he was removed to Georgetown in September. Soon after this period, he was seized with occasional turns of vomiting, accompanied with a febrile habit, a dry cough and with indigestion. About the same time also, it was remarked, that he had acquired the habit of raising his body erect, or of throwing it backwards, as if to relieve some uneasy sensation; and that he was losing in some degree the power and activity of his lower extremities, evinced more especially by stumbling as he walked: but late in the autumn, his general appearance was improved and he enjoyed comparatively good health for two or three months. Early in February, 1830, it was observed for the first time, that he manifested uneasiness from the exercise of riding in a carriage, and that he could not endure being jolted upon the knee, or lifted by the arms. On making an examination to ascertain whether there was not some strain or dislocation which would explain the embarrassment under which he laboured, a small protuberance was discovered over the spine. About this time a great irritation of the bladder occurred, accompanied with pain, a frequent desire to void urine, and a shuddering when it was discharged; this affection increased in its severity to the close of life. About the same time the abdomen became tumid and tense, and his sufferings were augmented by an attack of the measles, then epidemic in the city, which left him with increased debility, cough and fever.

In March, 1830, I was called upon to give my opinion with respect to the nature of the tumour upon the back. Upon examination, I found the spinous process of the superior lumbar vertebra slightly projecting with a small but obvious curvature of the spine. There was tenderness from pressure over the projecting part in its neighbourhood, and his motions seemed to be restrained, feeble and tottering. There was also evident marks of hectic irritation. The nature of the case was too obvious to be mistaken and I did not hesitate to pronounce it an affection of the spine, and one which would result in a caries of the vertebræ, and in an extensive deformity, if not in death, unless arrested in its progress.

With respect to the treatment, it would be both tedious and unsatisfactory to trace it through the various changes of a case so protracted and complicated. I would only observe in reference to the spinal disease, that issues were introduced on each side of the affected vertebra, in May, 1830, and other topical and general remedies were

used. Still the disease advanced with a slow, but steady progress, evinced by the increase of fever, loss of appetite and strength, emaciation, irregular bowels, paroxysms of spasmodic pain, enlargement of the abdomen, and increased curvature of the spine.

In October, 1830, the little patient was taken to Philadelphia, and placed under the care of Dr. JOHN K. MITCHELL, a gentleman to whom our country is largely indebted for his extensive investigations, and successful method of treating this most formidable disease.

When the patient was first placed under Dr. Mitchell's care, he was suffering under the pressure of a severe hectic, accompanied with a tumid abdomen, and diarrhœa, of which the discharges were purulent. The pus appeared like that which usually escapes from strumous cavities and was supposed to come from an abscess connected with the carious vertebra. His appetite was feeble, his respiration hurried and irregular, his skin unequally active, his muscular strength almost entirely gone, and his motions even on the bed to which his debility confined him, were painful. From a belief that issues are often injurious in exciting and keeping up hectic irritation, an opinion, says Dr. Mitchell, derived from long observation, they were closed as soon as possible. To correct the irritated state of the intestinal action, a small blue mass pill was given every evening, and the diet was rendered as simple as possible. But as no visible improvement followed these measures, the little patient was subjected to the use of the spine-cart, a remedy which has given signal relief in many cases of painful caries of the spine, detailed in the communications of Dr. M. already before the public. Its application was quite as beneficial as anticipated. To use the language of the observant and intelligent mother, the swelling of the abdomen subsided, the pains left him, the fever abated, and the discharges became in other respects healthy, although the purulency was not materially diminished. These changes took place in three days after the application of the spine-cart. At the end of six weeks, his whole appearance was so much improved as to afford a rational hope that the patient might finally attain health and a solid spine. When he arrived in Philadelphia, it was necessary to avoid the slightest jolt; but before his departure for Washington, he rode about the streets of Philadelphia, without making any complaint. The weather on his journey homewards was both wet and stormy, and the necessary exposure brought on a severe catarrh, with fever and pain, attended with a loss of appetite, and a diminution of flesh and strength. But in the beginning of January, 1831, these symptoms abated and he began to recover his appetite and flesh, and his bowels became more regular, although the passages were still

charged with pus. From the time he returned from Philadelphia, at which period he first became my patient, the spine-cart was applied from three to five hours daily for several weeks, and with evident benefit; but in the early part of March, he was again affected with cold, which brought on a return of all his unfavourable symptoms with increased violence, and from this time the use of the cart was necessarily abandoned. The fever returned, accompanied with loss of appetite, thirst, fatigue of the lower extremities, great debility and sleepiness. The discharge of pus from the bowels became more copious; the urine was also rendered turbid by its presence, and deposited large quantities of matter when cold. He continued to linger, becoming more and more exhausted, till the 12th of July, when he died in a state of extreme emaciation.

Post mortem examination.—Twenty-four hours after death, I made a careful examination of the body, in presence of Drs. WASHINGTON and BOHNEN, and discovered the following appearances:—On laying open the abdomen, the liver, spleen, and small intestines alone, were found in a healthy condition. The large intestines, in their whole extent, were thickened and changed in their organic structure, being contracted in some parts, and enlarged in others; with their different convolutions, where they came in contact, firmly adhering. The whole of the mesentery was thickened, and its glands enlarged to the size of grapes. The pancreas was also slightly enlarged and diseased in its structure. The left kidney was in a healthy state, but the right was enlarged to four times its natural size, with its ureter irregularly dilated to three-fourths of an inch in diameter, its coats the fourth of an inch in thickness, and of a cartilaginous hardness. The bladder was diminished in its capacity, and distended with urine and pus; its coats were thickened, hard, and elastic, and its mucous surface studded with small, white tubercles. Behind the peritoneum, and in the direction of the right psoas muscle, we found a mass of caseous matter, extending from the diseased vertebra to the right sacro-iliac junction. The large intestines contained a considerable quantity of pus, and a communication was found to exist between the diseased vertebra and the arch of the colon, where it crosses the spine, by which the matter made its way into the cavity of the intestines. On removing the intestines, a greater part of the bodies of the two superior lumbar vertebra, with the intervening cartilage, were found destroyed by the disease and the vacuity created by the caries filled with pus. When the matter was washed away, the spine presented the appearance exhibited in the accompanying drawing.

Fig. 1. Shows the spine as straightened to its natural condition.

No. XVIII.—Feb. 1832.

Fig. 2. Shows the spine as curved in sustaining the superincumbent weight of the body.

Observations.—In reviewing the foregoing case, the following observations seem naturally to present themselves to the mind.

1st. The importance of an early attention to the premonitory diagnostic symptoms of spinal disease, in order that the appropriate remedies may be applied before caries or curvature take place, for it is in this early stage only, that medical treatment can be relied on with confidence. Whenever, therefore, fever becomes chronic, or is obstinate, without the detection of an adequate cause, the vertebræ should be carefully examined by pressure. If no tenderness be discoverable, we may safely infer the absence of spinal irritation, unless the frequent and soothing motions of the spine, the often sought recumbent posture, and the shuffling gait, determine the application of remedies to the spine, even though no tenderness be discovered by pressure.

2d. The immediate and complete relief from pain and other unfavourable symptoms by the suspension in a spine-cart, while a recumbent posture did not abate one morbid symptom, shows that the state of entire rest and horizontal position, so strongly insisted on by the highest medical authority, is not entitled to unqualified approbation, and that these two apparently opposite modes of cure demand a fuller experimental investigation.

3d. That although a single case cannot be quoted as adequate testimony in favour or against any particular mode of treatment, yet the unabating progress of the disease while under the application of issues, a remedy also established by long usage, and advocated by high authority, while an arrest of the disease was effected by a remedy less painful, and better adapted to the undisciplined years and tender condition of the sufferer, should cause the profession to pause and to reconsider well the propriety of their application.

ART. IV. *Reports of Cases of Injuries of the Head, treated at the Pennsylvania Hospital.* By G. W. NORRIS, M. D. one of the resident Physicians.

CASE I. *Compression of the Brain from effusion of blood into the Ventricles.*—A labouring man was brought into the hospital in November, 1830, with an injury of the head. The account given by the

persons who brought him, was, that two hours before a large tackle block had fallen from a height of eight or ten feet and struck him upon his head—that after a few minutes he got up apparently but little injured, and walked from the vessel on board of which the accident happened to the wharf, where he sat down and conversed with the persons around him—that after about an hour he began to be stupid, which state increased gradually till it ended in insensibility.

When admitted he was completely insensible, with both pupils strongly contracted—his pulse was tense and his breathing slightly stertorous.

His head was shaved and examined, but there was no external wound, and no depression of bone could be perceived, but there was great effusion of blood beneath the skin.

Previous to his admission he had vomited and had been bled. A consultation was called, and it was agreed to cut down upon the bone in order to ascertain whether or not a fracture existed—this was at once done by Dr. HEWSON, and it was found that the bone was uninjured. It was now determined to treat it in the same manner as a case of apoplexy, and a branch of the occipital artery which had been divided in making the incision was allowed to bleed freely.

A few hours after the incision was made the patient died.

Examination thirty-six hours after death.—The vessels of the brain were much congested, and a large quantity of clotted blood, thought to amount to six ounces, was found in the lateral ventricles. There was also some effusion of blood at the base of the brain.

CASE II. *Abscess of the Brain.*—John Gribi was admitted on the fourth of December, for a wound on the left side of his head, which he had received five weeks previously.

A few days before he was admitted, he was attacked with convulsions which were believed to be caused by the pressure of pus upon the brain, and he was sent into the hospital for the purpose of having an operation performed upon him. Upon examination of the wound it was found that there was a fracture of the bone with some depression.

He was sensible, his pulse was slow and regular, his pupils were contracted, the whole of his right side was paralytic, and there was a great disposition to sleep. As he had no convulsions after coming into the house, and as he was sensible, an operation was not thought of, and a poultice was applied to the wound. He continued in this state till the morning of the 7th, when he became insensible.

A consultation was now called, and it was determined to remove the portion of bone which was fractured, in order to ascertain whether

or not the compression was produced by pus between the dura mater and bone. Dr. Hewson accordingly enlarged the wound and used the trephine. No pus was found beneath the bone which was adherent to the dura mater.

No change in the symptoms took place after raising the bone—simple dressings were applied to the wound and a large injection and ten grains of calomel were given to him. Early on the next morning I found him with all the symptoms of apoplexy—a flushed face, a remarkably slow pulse, deep breathing and dilated pupils. He was now bled, sinapisms were applied to his extremities and another injection was administered. His pulse rose under the bleeding, his breathing became more natural, and his face less flushed, but a few hours afterwards he died.

Examination twenty-four hours after death.—On removing the skull-cap a small quantity of pus was found between it and the dura mater immediately below where the trephine had been applied.

On cutting into the left hemisphere of the brain an abscess was found, just below the surface, which extended upwards of two inches in one direction, and an inch and a half in the other, and contained three or four drachms of pus. An unusual number of red dots appeared in the brain, and the anterior part of its left side was softened. The vessels of the dura mater were injected.

CASE III. Fracture with depression, followed by inflammation of the Brain.—John M^r Quiggen, aged twenty-six, was admitted January 23d, with a wound on the back part of the left side of his head caused by a blow which he had received on the previous night from the sharp end of a spade. Upon examination it was found that there was fracture of the bone with depression.

The skin was cool, and he was faint from the large quantity of blood which he had lost, but had no symptoms of compression of the brain.

The wound was dressed with adhesive plaster, and to guard against inflammation of the brain he was kept perfectly quiet, was purged, and put on a very low diet.

He had no unpleasant symptom till the night of the 28th, when he complained of pain in the head, to relieve which, as it was judged his pulse would not bear bleeding, cups were freely applied.

On the morning of the 29th he became delirious, and continued so during the afternoon and evening; ten grains of calomel was now given to him and repeated in the night

At 3 o'clock on the morning of the 30th he was insensible, had stertorous breathing and dilated pupils, and at 4 o'clock he died.

Examination eleven hours after death.—The wound of the scalp was two inches in length; the bone was fractured for about the same length, and driven in upwards of a quarter of an inch upon the contents of the head—the dura mater was cut through, and the brain itself wounded.

Portions of the posterior and middle lobes of the left side of the brain, and a portion of the posterior lobe of the right side were disorganized.

The membrane lining the lateral ventricles at their posterior part was inflamed, and about a table-spoonful of pus mixed with blood was contained in it.

There was slight effusion of blood beneath the dura mater, at the top of the head, and also effusion at the base of the brain. The dura mater was inflamed.

CASE IV. *Abscess of the Brain.*—F. S. an insane patient in the hospital, was accidentally struck on the left side of his head by a quoit, on the 12th of April.

Upon examination, it was found that the skull was fractured and driven in upon the brain.

No symptoms of compression followed the blow, and after allowing the wound to bleed freely, it was dressed with lint, spread with simple cerate, and the usual means for preventing inflammation of the brain were resorted to.

After a few days he had fever, attended with pain in his head, for which he was purged with calomel, had a solution of tartar emetic given to him, and cups, leeches, and cold applied to his head. His fever gradually left him, but on the 25th he appeared more dull than usual, and on the morning of the 26th had a chill, which was followed by a state of insensibility, and on the afternoon of that day he died.

Examination twenty-four hours after death.—The fracture was an inch and a half in length, and the dura mater beneath it was cut through.

A thin clot of blood was found between the dura mater and the bone, and there was also slight effusion of blood beneath the dura mater.

Immediately beneath the fracture an abscess was found, of the size of a large walnut. The whole brain presented fewer red dots than usual when cut into, and with the exception of that part just around

the abscess, which was much softer than usual, and of a light yellowish hue, was of the natural consistence and colour.

The membranes of the brain were not at all injected, or their structure in any way altered. There was slight effusion of serum beneath the arachnoid, but none in the ventricles.

CASE V. Compression of the Brain from effusion of blood.—Charles Devenport, a coloured man, fell from a height of twenty-five feet on the morning of the 13th of August, and received an injury of his head, on account of which he was immediately conveyed to the hospital.

When admitted, his skin was cool, his pulse feeble, and his pupils natural—his attention could be roused when spoken to loudly, but he was unable to answer correctly.

Upon shaving his head, it was found that there was no external wound, but that there was great effusion of blood beneath the skin on the left side of the head.

Sinapisms and heat were applied to his extremities, and cold to his head.

In the latter part of the day he vomited bilious matter twice; his head was hot; pulse still feeble, and the insensibility greater. External stimulants were continued, and in addition to them, cups were applied to his temples.

At 4 o'clock on the morning of the 14th he died.

Examination twelve hours after death.—On cutting through the integuments a very large quantity of blood was found effused beneath the skin, and on removing the skull-cap, about $\frac{3}{4}$ ss. was found between the dura mater and bone at the back part of the head.

Upon examining the skull a fissure was seen extending from the side of the foramen magnum up through the occipital bone to the sagittal suture, travelling up that suture about half its length, and from thence extending into the parietal bone of the left side for two inches. The sides of the occipital bone were separated from each other to the extent of a line. The longitudinal sinus of the dura mater had two wounds in it just above the torcular herophili, one of which was large enough for a common-sized quill to pass through. There was some effusion of blood beneath the pia mater on each side of the cerebrum, and also on the upper and back part of the cerebellum.

About an ounce and a half of blood was found under the pia mater at the base of the brain. The vessels of the brain were much congested, and a small quantity of bloody serum was found in the ventricles.

CASE VI. *Compression of the Brain from depressed bone.*—Edward Morris, a coloured boy, aged fourteen, was admitted into the hospital, August 25th, with compression of the brain. A few hours before his admission he had been struck upon the upper part of the left parietal bone with a sharp stone, which had produced a large wound of the scalp and fracture of the bone.

The persons who brought him to the hospital stated, that immediately after the receipt of the injury he walked a short distance and then fell in a convulsion: from that time till brought into the house he had had several convulsions, and when free from them he remained in a state of complete insensibility. Previous to his admission he had been bled.

Dr. BARTON was in the house at the time of the admission of the patient, and at once enlarged the wound, which bled very freely, and exposed the injured bone, which was driven in, and formed as it were an inverted arch. As there was no fissure whereby the elevator might be got under the bone, the trephine was applied, and the depressed bone raised.

Upon raising the bone no pulsation was seen in the brain, but in the course of a few minutes the convulsion which he had went off, and the brain began to pulsate. He had three convulsions after the depressed bone was raised, and each time during the continuation of them there was an entire cessation of pulsation, but upon their going off the pulsation would again recommence.

The wound was lightly covered with a soft poultice, and as his skin was cold, heat was applied to his extremities.

After reëction had come on, thirty-five leeches were put upon his temples.

Although free from stertor, yet his insensibility continued till late in the afternoon.

By night he was completely sensible, and it was discovered that his whole right side was paralytic.

August 26th.—Has no pain in his head; pulse good; skin comfortable; is able to use the lower extremity of the right side; is not able to raise his arm, but has the proper feeling in it, and can move his fingers. His diet was directed to consist of mucilages, and a solution of cream of tartar was given him for drink.

27th. Has complete command of the right side of his body. Complains of his head feeling hot, but has no pain in it; pulse rather frequent. Took $\bar{\text{z}}$ x. of blood from him, and ordered $\bar{\text{z}}$ ss. of salts to be given to them, which operated freely.

28th. No pain in the head; wound is suppurating freely and looks well; pulse good.

30th. Improves; pulse natural.

Sept. 3d. Continues to improve. The dura mater is now covered with granulations, and the wound is filling up rapidly. From this time his diet was gradually increased, he improved regularly, and by the 20th of October the wound was entirely healed.

ART. V. *Observations on the Remedial Powers of the Cimicifuga Racemosa in the Treatment of Chorea.* By JESSE YOUNG, M. D. of Chester County, Penn.

CHOREA SANCTI VITI, although of not very frequent occurrence, or of an immediately dangerous tendency, is generally an exceedingly obstinate and intractable disease, and sometimes persists for months or years, inducing loss of appetite, anxious and dejected countenance, extreme debility, and what is most distressing, a gradual declension of the mental faculties, and the hideous prospect of its terminating in complete and permanent imbecility or fatuity. Such being the case, I have thought that it would be interesting to make known the remedial powers in this disease, of a plant, which, so far as I know, has not been recommended by any one who has written on the subject, and which has proved completely, and very promptly effectual, in *four* successive cases, in which I have known it used; although only one of them was under my own particular care or direction; I can however vouch for the entire correctness of the statements of the other cases.

The article referred to is the pulverized root of a very common vegetable production of our rich woodlands, known by the common or familiar name of *black snakeroot*. Its technical name as given by DARLINGTON, quoted from ELLIOTT, is *Cimicifuga racemosa*, called by PURSH, *Cimicifuga serpentaria*, and by WILLDENOW, MUHLENBERG, and MICHAUX, *Actea racemosa*. I subjoin its botanical characters from the Florula Cestrica of Dr. Darlington. Class *Polyandria*, Order *Di-pentagynia*. Calyx four or five-leaved; corolla four-petalled; capsules one to five, oblong, opening along a lateral suture; many-seeded; monogynous; leaves decomposed; racemes virgately paniculate; common in rich woodlands; flowers latter end of June;

four to six feet high; flowers white. "It is a very popular medicine both for man and beast; it is used in infusion or decoction, chiefly as a pectoral medicine," &c. Perhaps there is no country physician but will acknowledge the truth of the above, and perhaps too, they will agree in the assertion, that "its properties have probably been overrated" in the affections in which it has heretofore been used. Who first used it in chorea, I have no means of learning, but it came to my knowledge as related below.

Four years ago a son of Mr. Joseph Fairlamb, aged about eleven years, was attacked with chorea; one side was affected, and was in almost constant motion, except when he was asleep. He was affected with it more than four months, during all which time his family physician was using all his efforts to arrest it, but without the least benefit resulting. He at length was informed by an *old woman* in the city, to whom he was speaking of the distressed situation of his son, and not consulting her as a doctress, that the pulverized root of the black snakeroot would cure it. She told him to give a tea-spoonful three successive mornings, then omit it three, and thus give it alternately three mornings together, until he gave it nine times. He procured a quantity from a drug store, and commenced its use immediately on his arrival at home, according to the old lady's directions, and he lately assured me that when the boy had taken six portions he was almost well; and when he had taken his nine portions he was perfectly cured, and has remained so ever since. I heard of the case and its cure about the time it occurred, but having no confidence in such a remedy for such a disease, it only brought to mind the adage *post hoc*, &c. and I thought no more of it at the time.

In the month of March of the present year, a daughter of Mr. Isaac Hall was attacked with the same disease. His family physician was called to the case, and after treating it for about a month, without any good resulting, his physician agreed to let him make use of the snakeroot, as he had heard of its good effects in the above case. It was procured, and used as above, and after taking only three portions her symptoms were very much improved, and after taking six doses she was entirely well; the other three were however given, and she remains well at this time. In this case it puked severely, almost every time it was given. I now supposed that probably it was the emetic effect of the article which was beneficial; but on inquiry of Mr. Fairlamb, whether it operated so with his boy, he assured me it did not; but that it "several times, though not always," made him very sick. I now determined to try it, in the first case I might meet with, watch its effects, and thus ascertain whether it

would cure by its own intrinsic properties, or whether those reputed cures, might not be mere coincidences, and in reality the consequences of perhaps former treatment. On the 12th of September an opportunity for trying it occurred; I was requested to see Mrs. —, aged nineteen years; married about two months, believed *not to be pregnant*. The affection had commenced about two weeks ago, but came on so gradually, and almost imperceptibly, that she was not aware of any thing serious being the matter, till within a day or two, she has got so bad as to be almost constantly in motion, with the left side; it does not prevent her from sleeping at night; her general health is perfectly good, in every respect; and on the most minute inquiry, I could not detect a single cause which might occasion it; save only, her father had once been affected so, when a boy; in his case it was produced by fright, and he was cured, or got well in between two and three years, after using much medicine without benefit; but believes it was the cold bath that cured him at last. Whether this fact might account for it, others must determine. I ordered an emetic of tart. ant. with a view to its impression, rather than its evacuant effect, to be succeeded by a large portion of colomel and jalap, next day; and after this, to purge every morning with crem. tart. et jalap, till I could procure the snakeroot. On the 20th I took a quantity of it to her; but was actually startled, when I found the affection had extended to the other side, and was tenfold aggravated; her arms, her legs, her head, face, tongue, and every muscular part of the system appeared to be in continual, irregular, alternate motions; she could only with great difficulty articulate, so as to be at all intelligible; the power of deglutition was suspended to a very great extent; she could not walk one step, nor support herself erect without assistance, nor could she sleep, day or night, on account of the constant twitching and jerking of the muscles. This was her distressing situation when she commenced the use of the snakeroot. I ordered her to take a *tea-spoonful three times a day*, before eating; but if it sickened her, on trial, when taken on an empty stomach, to take it an hour after meals; to be taken in whatever she preferred, as sweetened water, molasses, &c. On the 25th I visited her again, and found a great change for the better; she had walked the day previously, three or more hundred yards from the house; she could speak, and swallow, as well as ever she could, and could sleep well at night; her inferior extremity had but little irregular motion, her head was steady, and the muscles of the face was scarcely agitated; but her arms appeared more affected now than any other part. Encouraged by this mitigation of symptoms, I requested the article discontinued

two or three days, and then to commence again, with a tea-spoonful and a half, as before. Visited her October 2d, found her so well that, a person who was not aware of her having the affection, would not notice any thing ailing her: still, however there was an occasional jerking in the arms; I requested it left off again for two or three days, and then to recommence, as last ordered, except to take it twice a day; she used it two days more, regularly, and then took an occasional portion sometimes once or twice a day and sometimes not, for one week, at the end of which time she discontinued it, being perfectly well, and she remains so at this time.

During my different visits, I repeatedly inquired whether it acted as an emetic or sickened her at any time; she uniformly replied it did not, except two or three times when taken on an empty stomach; neither did it purge, but her bowels were uniformly regular while using it; it neither sweated her, nor acted as a diuretic; how it did act I would not determine, as I could not discover any alteration in the pulse, while under its influence. I however incline to the opinion, that it cured by an immediate and direct impression on the nerves, rather than by any tonic effect. The only sensation the patient experienced was an "uneasy feeling," amounting to "almost an ache" through all her extremities, every time she took it, which would continue from one to three or four hours. This was all I could learn respecting its *modus operandi*; but that *it alone cured* must be obvious to every one.

The effects of it in the fourth case, I was informed of by my friend Dr. RICHARD GREGG. I inquired of him whether he met with any cases of chorea, and informed him of the results of the foregoing cases. He replied "I should have had a case, a short time ago, had it not been for the black snakeroot;" he observed that a man in whose family he practiced, met him in the road and informed him of one of his children having St. Vitus's dance; but he had heard of Mr. Hall's daughter having been cured by the snakeroot, and he was then on his way to see Mr. H. and learn how to use it; adding, if it dont cure I shall have to call you to see her. He saw the man a short time after, and learnt that the patient had been cured in a few days by the article.

The results of these cases, will certainly justify the inference, that it possesses controlling powers, to some extent, over the disease: to suppose that it will always cure, is perhaps too much to expect from any one remedy. My particular object in communicating them so minutely, is simply to state the facts of the cases, with the hope of directing the attention of the faculty to the article, and thus have it submitted to the test of a more enlarged experience, than could pos-

sibly fall to the lot of any one individual. If on repeated trials, it should be found really valuable, its peculiar effects, whether tonic, sedative, or whatever else they may be, can, by watching, be ascertained; and may we not hope, that by the aid of chemistry, its active principles can be detected and separated from those which may be inactive; and that we may thus be put in possession of a cheap and convenient article, which may possess virtues, in the treatment not only of chorea, but of many other of those most troublesome of all diseases, the neuroses.

The idea of the knowledge of its efficacy being derived from an *old woman*, should not, in my estimation, operate against the article so far as to prevent its having a fair trial. I believe the old lady was not a *professed doctress*; but if she were, the knowledge if it prove valuable is none the worse for coming from such a source. What physician has not, and does not, derive many ideas from old women, which are in reality, practically valuable? and it cannot but be acknowledged, that from such sources, and from mere accident, the knowledge of many of our most valuable remedies have been derived, which are now engrafted into, and form a part of the general stock of the science of our profession. If I know my own mind, I am not fond of, nor very prone to, quackery; and, although I freely confess this article was used without any knowledge whatever of its *modus operandi*, or without knowing what to expect of it, other than probably a cure, it did not disappoint the latter expectation; and I now feel sufficient confidence in it to try it again, if opportunity occurs, and to hope that others will do likewise. If this be quackery, and it be justifiable in any case, it may be so when applied to the investigation of the properties of our indigenous vegetables; but it is not, else the therapeutic part of our profession has scarcely any other foundation to rest upon, than a grand system of empiricism; for the history of almost the whole *materia medica* shows, that from such sources have been derived our most valuable agents. The investigation of the medical properties of our vegetable substances, then, should rather be considered laudable, when directed with the view of enlarging the boundaries of our knowledge, and thus adding to our resources, than condemned, because forsooth, they may have been the suggestions of vulgar ignorance, or even of empirical experiments, rather than the recondite inquiries of professional erudition. But neither a priori reasoning, nor professional erudition, can ever direct us to the peculiar properties or effects of any of our vegetable productions; they can only become known from repeated trials, or experiments. In this class exactly, stands the *Cimicifuga racemosa*, in chorea, and probably in

other of the nervous affections. Let it be fairly tried then, and on these trials let its merits stand or fall.

Chester, Pa. Oct. 29th, 1831.

[We are not aware of the remedial powers of the black snakeroot having been noticed by any writer on the materia medica, but Dr. Physick informed us, nearly ten years ago, that he had known that plant, given in doses of ten grains every two hours, prove successful in the treatment of chorea, in several instances.]—Editor.

ART. VI. *Observations on those Pathological States of the System generally designated Asthenia, Adynamia, Debility, Weakness, &c.* By E. GEDDINGS, M. D. Professor of Anatomy in the University of Maryland; one of the Surgeons to the Baltimore Infirmary, &c.

THE condition of the living organization which is manifested by a deficiency of power, or a preternaturally feeble exercise of the functions, and hence designated debility, asthenia, adynamia, weakness, &c. has been attentively observed from the earliest period of the world, has excited dread and consternation in the minds of physicians, unnerved the most Herculean powers of both mind and body, and has been accused of constituting an immense outlet of human existence, yet with all our observations and reflexions we are ignorant of its most important laws. Much of the difficulty which exists in relation to the subject is doubtless owing to the imperfect and ill-defined ideas which we attach to the condition itself; but more, unquestionably, to our ignorance of the fundamental laws of the organization. Debility, it must be confessed, is a mere relative term, and cannot be said to express, with accuracy, any positive condition of the functions, or of the structures by which they are performed. Thus, what would be weakness with one individual would be strength with another differently constituted, and by examining the play of the functions in several persons endowed with various temperaments, conformations, habits, &c. we shall observe an infinity of modifications in their physical powers, yet all consistent with perfect health. This, however, is not precisely the kind of debility or weakness with which we are most concerned. "Good health," says JOHN BROWN, "consists in a pleasant, easy, and exact use of all the functions. Ill health in an uneasy, difficult, or disturbed exercise of any or all of

them." It is, then, when the debility is of that kind which consists in such a degree of departure from the healthy state as to constitute disease, or, in other words, to become pathological, that it most interests us; and it is to this degree, or modification of it, that most of our observations will have reference. It is to this state that the term *asthenia* has been applied by some, and that of *adynamia* by other pathologists.

But we are yet met by the question, what is this *asthenia* or *adynamia*? Upon what state of the organization does it depend? What are its causes, tendencies, and the laws of its extension throughout the system? These are questions which can only be answered by determining the circumstances which attend the healthy operation of the functions, and, afterwards, the manner in which these become deranged or perverted so as to give rise to the want of power in question.

Every living organized being is endowed with a principle which renders it susceptible of the influence of stimuli, and when acted upon by external and internal agents, the result of the mutual conflict between the organization and the causes which influence it, or between the excitability, or susceptibility, and stimuli, is the development of a phenomenon or condition which we designate irritation. All vital phenomena must, therefore, be referred to this source. Under whatever aspect we contemplate them, irritation presents itself as their constant and predominant characteristic, and to its different modifications must be ascribed the endless varieties of healthy and diseased conditions. A knowledge of this law led John Brown to affirm, that life is a forced state; for, says he, if the exciting powers be withdrawn, death ensues as certainly as when the excitability is gone. But while we admit that the entire organization is thus endowed, it must not be conceded that its susceptibilities are equally active in its several parts. This property depends upon the perfection of the organization; its supply with blood-vessels, nerves, &c.; and as the several tissues present much diversity in this respect, so there is great variety in their comparative capabilities of receiving external impressions, and acting under their influence. This circumstance is the source of an important error in the doctrine of Brown, who maintained that excitability is an unit, and, consequently, that excitement must also be an unit, and may be either general, or producing an universal impression throughout the entire system, or local, and confined to a single part. If the law of the organization which we have alluded to be well founded, it necessarily follows, that no impression can be at first universal; or, as has been affirmed

with truth by BROUSSAIS, "*there can never be either a general and uniform exaltation or diminution of the vital properties of the organization.*" In every case the exaltation or diminution commences with some one system or organ, from whence the influence is extended to other systems or organs, either directly or indirectly. The order and degree in which any particular part of the body will be implicated, or made to feel the influence of the causes acting upon the organization, will depend, measureably, upon its susceptibility and the intimacy of its sympathetic relations with the other parts. Thus, the capital systems or organs, if we may thus express ourselves, as the digestive, circulatory, and nervous, are the parts which most readily feel the influence of external impressions, and transmit them with most facility, reciprocally from the one to the other; because they are not only the most exquisitely organized, and consequently possess the highest degree of susceptibility, but are, at the same time, united together by the most intimate sympathetic relations.

But although no agent can affect the organization equally and universally at the same time, there is nevertheless a certain relationship between the operation of its different parts—a certain equipoise of the functions in which perfect health consists. As excitability, susceptibility, receptivity, &c. as it has been designated, is the fundamental quality or property of living matter, to which all vital phenomena must be referred, so is contractility the proximate quality or property by which all these phenomena are accomplished; and the action of stimuli upon the excitability calls into existence the contractility of the tissues, the manifestations of which constitute irritation, which we have already defined. By vital contractility, the shapeless embryo is unfolded and perfected in all its parts; the heterogeneous particles, derived from our aliments, are animalized, and transformed into living structures; and by the same power they are again thrown off, as excrementitious, through the different waste-slucies of the system. By this power the nerves feel, the mind perceives and wills, and the muscles act obedient to its volitions. The indispensable condition of our existence is an incessant state of exertion—a ceaseless state of action and reaction, without which the wheels of life would stand still, and all our wonderful machinery would be brought to the condition of shapeless and inanimate masses, and be speedily resolved into a few primitive elements as insignificant as the dust we tread under foot. Can it then be wondered that actions so delicate, mechanism so complex, operations so perpetual, should often become irregular and discordant, and thus endanger our safety? Life, in its perfect state of integrity, is, indeed, as represented by CUVIER, "a

perpetual vortex, the direction of which, however complicated, is always the same." But when this state of unison becomes deranged, the direction of the vortex is necessarily changed, and we too often become swallowed up in its conflicting elements.

As stated in the outset of our observations, we only propose to consider that derangement of the harmony of the vital properties of the organization which consists in an enfeebling or diminution of its powers. But what are the principal modifications or varieties of this state? This is a question upon which the sentiments of pathologists are much divided; some making as many varieties of debility as there are modifications of its manifestations, while others, considering excitability as an unit, only make debility the negative state of excitement; and some only having reference to its remote causes, have made forms of debility as numerous as the causes by which it is produced. SAUVAGES,* acting upon these principles, has made seventeen varieties of asthenia, and VOGEL† has arranged under this head every abolition or diminution of the energy of sensation, voluntary motion, and the natural functions; while CULLEN has restricted his definition to an enfeebling of the voluntary movements, either of the vital or animal functions. BROWN, DARWIN, and RUSH, however, only make two forms of debility, direct and indirect; or as the latter has expressed it, debility from abstraction and debility from action. HUFELAND,‡ on the contrary, acting upon a different view, divides it into true and apparent or false, and he says it may take place either from an oppression of the vital powers, or from some alteration of the nervous sensibility. Broussais considers it in most instances as secondary, except where it arises from abstraction of stimuli; and RASORI, TOMMASINI, and others of the modern Italian school, admit that it may be primary or secondary, according as it is the result of contra-stimulant or stimulant impressions. BOISSEAU,§ who has written with ability on the subject, considers it according to the manner of its production, from whence he concludes it may originate from the three following circumstances: 1. From a complete or prolonged abstraction of the accustomed stimulus; 2. The diminution of the reciprocal stimulating influence of the organs; and 3. From the inordinate excitation of an organ, the slightest alteration of which renders the other organs incapable of acting with an equivalent energy. BRACHET,|| in

* Nosologia Methodica, Tom. I. p. 699. Amstelodami, 1768.

† Definitiones Generum Morborum. Götting, 8vo. 1764.

‡ Encyclopädisches Wörterbuch der Med. Wissen. Band 1.

§ Dictionnaire Abregé des Science Med. Art. Asthenie.

|| Memoire sur l'Asthenie, Paris, 1829.

a prize dissertation on the condition under consideration, affirms that asthenia can only manifest itself in consequence either of a diminution of the action of the cerebro-nervous system, consisting in an enfeebling of its special functions, or of the functions over which it presides, or of a diminution of the activity of the functions which depend upon or are under the influence of the ganglionic nerves. This weakness of the nervous system, he thinks, may arise either from a deleterious alteration of the blood, or from a considerable diminution of its quantity.

Without entering into any discussion upon the validity or inconsistency of any of these opinions, we shall proceed at once to detail our own views relative to the nature and consequences of asthenia. In considering the subject we shall pursue a course somewhat different from that which has generally been adopted, and employ a phraseology at variance with that which we have seen was used by Brown, Darwin, and Rush.

For the sake of description we shall divide debility into direct, indirect, and metastatic, not employing the two first terms, however, in the same sense in which they were used by Brown. He confined his definition of direct debility to that which proceeds from an abstraction of stimuli, while in addition to this, we shall include under that head, the debility which arises from those causes, which, by their contra-stimulant influence, directly enfeeble the organization. By indirect debility, we mean as well that weakness that arises from exhaustion, or fatigue from overaction, as that which takes place in consequence of a prejudicial deterioration of the nutritive molecules of the blood, in consequence of impressions first made upon the living solids, which, by their modified or perverted operations on their contained fluids, alter their properties. The term metastatic debility, (*debilitas metastatica*,) was employed by Hufeland to represent that state of debility which proceeds from a transfer of diseases, especially those of a cutaneous character.* By it we wish to designate that form of asthenia which takes place when one organ is inordinately irritated, and thus concentrates a portion of the irritation of the others in a focus, leaving them in a minus state of excitation. With these preliminary definitions, we shall proceed to consider the different forms of debility which have been enumerated, taking them up in the order in which they have been detailed.

* Encyclopädisches Wörterbuch der Med. Wiss. Band 1, 453.

§ 1. *Direct Debility.*

It is needless we should say much of the first variety of direct debility, or that which proceeds from the abstraction of stimuli, as instances of it are too numerous to require any particular exemplification. The humbler walks of life, where squalid poverty and indigence prevail extensively, present unfortunately too many examples of debility from the abstraction of stimuli. The pallid and emaciated form, the flaccid and inactive muscle, the impoverished and almost colourless blood, the general imbecility of the mental faculties, together with the universal breaking up of the vital forces, too clearly proclaim, that under these circumstances the proper quantity of the *pabulum vitæ* is not furnished to nurture and sustain the flame of life, which, being gradually exhausted, either flickers away for want of sustenance, or is at once extinguished by the influence of mortal diseases, generated by the unnatural and restrained circumstances under which it is placed. Asthenia from this cause is fortunately not of frequent occurrence in this country: but in other sections of the globe, in which either from a native sterility of the soil, an overgrown population, or habits of indolence, a sufficient quantity of healthy sustenance is not furnished to satisfy the demands of nature, asthenia of the kind in question often prevails to a deplorable extent, and becomes a fruitful source of disease and death. It is, indeed, under these circumstances, that the most formidable pestilences are usually generated, and in camps, prisons, garrisons, &c. this cause operates so extensively, as often to constitute one of the principal calamities of war.

But it is not the abstraction of sustenance alone that gives rise to consequences thus deplorable. They may take place even where the quantity is considerable; but where the quality is not suited to the exigencies of nature. Man seems to require, to ensure the full development of his physical forces, a due admixture of vegetable and animal diet, as it has been satisfactorily proved, that an exclusive use of the one or the other of the substances is highly unfavourable to the attainments of this end. The Burats, who subsist on food almost exclusively animal, we are told by PALLAS, are remarkably effeminate, and are so weak and small of stature, that five or six Burats are often incapable of accomplishing what a single Russian can effect. Contrary, moreover, to what has been often asserted and believed, muscular energy is more feebly developed in savage life than in a state of civilization. This proposition has been fully established by the observations of COLLINS, COOK, PERON, and others. In the native

inhabitants of Van Dieman's land, who subsist measureably upon fish and insects, the muscular power was found by Peron, on several trials, to be less, by almost one-third, than in the English. The abstraction of air, light, heat, and electricity is capable of producing results similar to those which arise from the abstraction of food and drinks. There is, however, one circumstance connected with the abstraction of food and drinks, which is somewhat curious:—that the latter are much more important for the preservation of life than the former. It was long ago observed by Hippocrates, that an abstinence from food can seldom be endured beyond seven days, without inducing death. The allowance of a small quantity of water has, however, been known to protract existence considerably beyond that period. REDI* found by experiment, that fowls deprived of both food and drink, did not subsist beyond the ninth day, while the same animals, supplied with water alone, sometimes lived twenty-one days. The human subject has been known to subsist for a longer period on water, without any thing like food. But in all cases, a deficiency of the one or the other is productive of great distress. When intense hunger or thirst is protracted for any great length of time, the head and stomach become painful; fever, jaundice, and delirium supervene; an overwhelming debility takes place; the features shrink; the teeth become covered with a black sordes; the saliva bitter; the breath offensive; the urine acrid and scalding,† and life is terminated under the most horrid sufferings; or if preserved by an allowance of food, the individual generally suffers a dangerous and protracted disease, generated by the intense degree of asthenia, by which his powers are overwhelmed.

The influence of the exclusion of light and air on animal, and even vegetable life, is well known. Cut off from these sources of stimuli, the vegetable droops and languishes; its growth is interrupted; its parts are imperfectly unfolded; it is unable to put forth its rich and luxuriant foliage; the native brilliancy of its colours grows pallid and sickly; it withers away like the “scur and yellow leaf of autumn,” “and perishes and passes.”—Light is indeed so essential to the existence of many vegetables, that they turn their expanded disks to the bright orb of day, and drink in, from his brilliant rays, their life and animation. Others fold in their rich petals and foliage at the approach of evening, and during the reign of darkness, seem to repose in a state of torpor, until again aroused to life and activity, by the return

* Osservazioni intorno agli Animali viventi, &c. Firenze, 1684, p. 92.

† Rudolphi Grundrisse der Physiologie, Band. 3, Berlin, 1828.

of the genial influence of the morning sun. Animated nature, too, participates in this paralyzing influence of darkness, and this vivifying controul of light. As night comes on, the sweet warblings of the songsters of the grove gradually die away; the lowings of the herds are hushed; the fowls retire to rest, and even man, wearied by the cares and toils of day, and enfeebled by the empire of darkness, is gradually weighed down by sleep, and overwhelmed in sweet forgetfulness.

Cut off from the pure vital air of heaven, man cannot exist, and even a partial abstraction of this important principle speedily enfeebles the physical forces to an alarming degree. Were any illustrations of the induction of asthenia from this cause necessary, a most melancholy source is furnished by the account of the sufferings of some English prisoners, who were confined in the black hole of Calcutta. Of one hundred and forty-six individuals thrust into this miserable prison, which was only about eighteen feet square, and deprived of every source of ventilation, except by two small grated windows, only twenty-three survived, at the expiration of about ten hours, and they in such an enfeebled state, that when an order was received for their release, it was with much difficulty the piles of the dead could be removed, which had become heaped up against the door. They suffered the most indescribable tortures, from which they were only released by death, or a state of insensibility.

The abstraction of heat is another fruitful source of asthenia, which should be ranked under the head we are now considering. Moderate degrees of cold have been supposed to invigorate the system, and if we may judge from the constitutions of those who inhabit temperate regions, the conclusion would seem to be just. But it must be remembered, that the intense degree of heat, which is endured in tropical regions, debilitates by exciting inordinately the powers of life, and by thus occasioning an excessive discharge of the fluids of the body. The greater vigour, therefore, of the inhabitants of higher regions, is merely owing to their living in a temperature more congenial to the susceptibilities of the system, and their not being exposed to the debilitating influences just mentioned. The well-known effects of an intense degree of cold are to produce an alarming depression of the vital forces, and even an extinction of life. This is manifested in various ways; as for example, in the languishing circulation, a diminution of animal heat, a loss of muscular energy, a complete extinction of sensation and reflection, and finally, death. The whole of the energies are rapidly subdued, and the stoutest heart cannot bear up. An irresistible disposition to sleep seizes upon the

individual, which no efforts, or admonitions, or remonstrances can subdue; and he quietly falls into the slumbers of death. The debilitating influence of cold is, indeed, sometimes so powerful, that birds are often known to fall down benumbed and helpless, or stiff and dead; and even the polar bear, destined by nature to live in the ice-bound regions of the Arctic circle, not unfrequently falls a victim to the debilitating influence of the intense cold of his native skies.

But, perhaps, a more important variety of direct asthenia or debility, is that which is produced by the operation of contra-stimulant agents, or those causes which tend, by their peculiar properties, to produce a direct depression of the powers of life, independently of any negative property or quality.

Brown laid it down as an axiom, that all agents which are capable of affecting the organization, produced their results by a process of stimulation. In this opinion, however, he has not been sustained by subsequent observations. Indeed, experiments have satisfactorily demonstrated, that there are an immense number of agents which produce an impression directly opposed to that of stimulation, or enfeeble or depress the vital forces, by an operation which is direct, and unpreceded by any excitement. These have been called, by the modern Italian physicians, *contra-stimulants*. Of the several causes which act thus upon the animal organism, some produce their effects, as it were, instantaneously, and in a moment extinguish the powers beyond recovery; others act more tardily, and merely produce a gradual diminution of the vital energies. Even a single drop of prussic acid, merely applied to the surface of the eye of a dog, or to the tongue, produces death in three or four seconds, and injected into the veins of an animal, it extinguishes life in an instant, as by a stroke of lightning, leaving the muscles almost entirely devoid of all traces of irritability. All substances, possessed of narcotic properties, enfeeble the powers of life, and produce a degree of asthenia which is sometimes alarming, and even fatal. The nervous susceptibility is annihilated; sensation is enfeebled or obliterated; the pupil is widely dilated, the eye is insensible to light; the mind becomes incoherent, or is overwhelmed with a general stupor and coma; the pulse flutters, or is scarcely perceptible; the respiration is slow and heavy; a general coldness diffuses itself over the body; the muscles are agitated with tremors, or are flaccid and inactive; and death is gradually induced by the overwhelming debility which pervades the organization. These effects arise from the operation of a great diversity of agents, and are almost always induced by an inordinate dose of opium, hyosciamus, belladonna, tobacco, &c. Indeed, all these substances possess the

property of enfeebling, or extinguishing the irritability of the organization; and thus, by rendering it insusceptible to the impressions of the ordinary stimuli which act upon it, either occasion an alarming degree of debility, or even death. Himly found by experiment, that a solution of opium, applied to the brain or the stomach, completely destroyed the irritability of the heart in the short space of ten minutes; and many of the irrespirable gases, as the sulphureted and carbureted hydrogen, the carbonic acid, &c. are known to produce the same effect with great promptitude. Indeed, the researches of Bichat have satisfactorily shown, that even the black, or undecarbonized blood, when brought in relation with the left side of the heart, completely paralyzes its energies, and arrests its contractions. An impure atmosphere always contributes to give rise to more or less debility, and in some situations, especially those which are exposed to miasmatic exhalations, the enfeebling and undermining influence of this cause is very strikingly manifested. We are aware that there has been some differences of opinion relative to the primary operation of malaria, some conceiving it to be debilitating, while others have maintained that it is always stimulating; but if we attend to the manifestations attendant upon its action, every thing will be found to favour the first of these opinions. Under all circumstances the internal and external cutaneous surfaces, or the mucous membranes and the skin, are the recipients of all impressions developed by this peculiar impalpable material, and whenever exposed thoroughly to its influence, we find their functions impaired or suspended, or submitted to a deranged or perverted action, proportionate to the intensity of the cause acting upon them. Their susceptibilities are blunted; their secretions are suspended or diminished in quantity; their circulation languishes; a general stupor and inappetency seizes upon them, and this influence being gradually extended to the other systems, the natural vigour and harmony of their functions become disturbed and broken up, and a profound asthenia overwhelms and paralyzes as it were the energies of the living organism. The sunk and pallid countenance, the flaccid and tremulous muscle, the languid circulation, the imperfect calorification, the sluggish sensibilities, and the general imbecility of the mental and corporeal energies of those who have been long exposed to the influence of an atmosphere abounding with these poisonous exhalations, too clearly prove, that their effects are powerfully debilitating and that they cannot be referred to a stimulant impression. It is indeed in this manner that they become such a prolific source of disease, and lay the foundation for such serious and irreparable ravages upon our organs. Many of the metallic salts, moreover, seem to ex-

ercise a debilitating influence upon the living organization. This is especially the case with antimony and lead, the latter of which, indeed, when pushed to any extent, is capable of producing a complete paralysis of the muscles. To these causes must be added the influence of the depressing or debilitating passions, which sometimes prostrate, in an instant, the whole of the powers of the system, even beyond recovery. The operation of fear, especially, tends powerfully to enfeeble the powers of life, and under its agency even the stoutest heart is made to quail, and the bravest cheek grows pale and lifeless. The muscles are instantaneously bereft of all power; the life blood retreats from the surface; the heart palpitates; a mortal coldness diffuses itself through the system; an icy sweat breaks out upon the surface; the senses wander; the intellect is dethroned; the volitions annihilated; and a general syncope, in some instances, paralyzes all the organs and functions. Sometimes, indeed, vitality becomes extinct, being annihilated as it were by the overwhelming influence of the debility which suddenly takes possession of the organization. Instances of syncope and death from fear are not of unfrequent occurrence, and furnish a good exemplification of the direct debilitating influence of the depressing passions. The influence of grief and remorse also unnerves the vigour of the vital powers, and undermines the healthy play of the functions. The heart grows sick with care, and under the wasting agency of sorrow and despair, the natural plumpness of health shrinks and withers, and its bloom and freshness fade and vanish. All these causes act somewhat differently, yet all are instrumental in developing similar results. Those of a physical character exercise their influence by debilitating some portion of the living organism, which, from its sympathies, tends to involve other portions in the same condition with itself; while those which are purely mental, seem first to enfeeble the brain, and to extend their influence from thence through the spinal centre and the ganglionic nerves, to the different systems and apparatus over which they preside.

To the causes of debility which have been enumerated, must be added the condition which has been called by some pathologists anemia, or that state of the system which has been characterized by a paucity of blood. When this deficiency has been occasioned by the artificial abstraction or accidental loss of the vital fluid, its debilitating influence is well known. But although this form of anemia very naturally falls under this division of our subject, it is not our intention to consider it here, as its effects are so palpable as to require no illustration. The form of anemia to which we wish to have special

reference, is that which proceeds from some change taking place in the process of sanguification, or in the organic structures by which the blood is elaborated and distributed to the elements of our tissues. It may be very justly alleged, that the anemia is, under these circumstances, consecutive upon preëxisting debility, and that it is the consequence and not the cause of that condition. But although this is true, as regards the state of that portion of the organization which is in immediate fault in occasioning the anemia, yet it is not altogether correct when applied to the parts which may suffer from the defective or deteriorated circulation through them; for, as the blood is an essential stimulus for the living organism, it necessarily follows, that whenever its supply is defective, or its qualities deteriorated, the portions of the organization which are brought under the influence of this defective supply, or this imperfectly animalized blood, must be enfeebled in a direct ratio with the extent of its privation. It is a well-known fact, that when the supply of blood is entirely cut off by the application of a ligature, the muscles are speedily seized with paralysis. Whatever, therefore, diminishes the supply of blood, whether it be imperfect sanguification, a diminution of the calibre of the vessel, a protracted metastasis of the fluid to some other point, or a mechanical impediment to its course, will always debilitate the structure or organ which is exposed to the influence of such cause. A somewhat interesting case of debility complicated with, and probably dependant upon, a general state of anemia, fell under our observation. The individual was a maniac, and had been in that condition for several years, before we became acquainted with the circumstances of his case. With the exception of his mental alienation, he had generally enjoyed good, though not robust health. During the period that he and many others labouring under the same malady were objects of our care, his general health began gradually to decline. He was observed to grow pallid and inactive; his muscular strength gradually declined, and at length became almost extinct: his bowels were torpid; his appetite capricious, though generally he eat the diet that was allowed him. A general inactivity and sluggishness seemed to seize upon all his functions, without our being able, on the most careful examination, to fix upon any particular organ as constituting the source of the manifest decline of the vital powers. His diet was improved; he was submitted to a course of alterative and tonic medicines, yet the asthenia continued to progress with a regular pace. His whole aspect became exsanguined; the borders of his lips presented the appearance of one who had suffered a profuse loss of blood; his muscles became gradually so feeble as to be unable

to sustain the weight of the body, and he was consequently compelled to remain in the recumbent or sitting posture. His bodily powers continuing thus to decline, his faculty of articulating became enfeebled in a proportionate degree, and he finally sunk under the general debility which had taken possession of his organs. On examination after death, the whole of the tissues, with the exception of the muscular, seemed to be almost entirely deprived of blood, or presented the appearance of having been bleached. The arteries and veins were for the most part empty and colourless, and the small portion of blood which had circulated in them, was nearly all collected about the right side of the heart. The muscles retained their natural colour, which contrasted very strongly with the blanched aspect of the other tissues. The brain was unusually white, and was considerably indurated throughout its whole extent—so much so, that it could be rudely cut and handled without being torn or otherwise much injured in its texture. The liver was apparently in a healthy state; the gall-bladder contained the usual quantity of bile; but the bowels, and especially the stomach, presented a diameter altogether unusual. The latter, especially when isolated from the body and cautiously inflated, without using more force than was applied to two other adult stomachs similarly treated at the same time, assumed a volume at least double that to which they could be distended. The distention was equable at every point, and seemed to be attended with an attenuation of the tunics of the organ, which were bloodless and remarkably transparent.

The circumstances of this case are important in several respects, and naturally suggest the question, whether the anemia was the consequence of the induration of the nervous centre, and the cause of the depression of the vital forces? or whether the induration of the brain was the immediate cause of the loss of power, without the anemia having any participation in its development? We are inclined to adopt the former opinion, which, indeed, seems to be supported both by reason and analogy. It is well known that perfect hæmatosis or sanguification, exacts a due and regular supply of nervous influence, and that whatever diminishes or cuts off the influence of innervation, diminishes or suspends that process. The texture of the brain, therefore, having been altered and rendered more compact in its arrangement, than was consistent with the regular exercise of its functions, and the influence of this derangement being reflected, as it were, into the system of ganglionic nerves, which preside over and regulate all the molecular compositions and decompositions of all our solids and fluids, the natural harmony of these changes were of course disturbed or in-

interrupted; the process of chylification was therefore imperfectly performed; that fluid could not be duly animalized, and was not submitted to those changes by which it is transformed into blood. In consequence, therefore, of the operation of these causes, a sufficient quantity of blood was not elaborated to excite and maintain the healthy play of the organism; it of course became enfeebled in proportion to the privation, and the train of phenomena were developed which exhibited themselves in the progress of the case. But it may be urged, in objection to this conclusion, that the induration of the cerebral mass was sufficient of itself, independently of the anemia, to produce the loss of power manifested by the individual. This we are willing to admit might have been the case, yet we are disposed to doubt the validity of such a conclusion; for it often happens that the brain is as much or even more indurated than it was in this instance, without giving rise to any remarkable depression of the powers of life. Besides, the anemia could scarcely be attributable to any other cause than that which we have assigned; and as the known effects of a diminution of the quantity of the blood, or a deterioration of its qualities, are to enfeeble the organism, we think we are warranted in giving the preference to the conclusion which we have adopted.

Many cases of extreme debility, and even death, proceeding from anemia, might be enumerated, and especially those which occurred amongst the workers of the coal mines of Auzain and Dunkirk, as described by CHAUSSIER; but we deem it unnecessary to multiply examples, inasmuch as what has been already said will, we trust, be sufficient to illustrate the principle in question.

But debility may be also produced by an alteration in the quality, as well as in the quantity, of the blood. Whatever tends, therefore, to deteriorate its properties—to render it less nutritious, less capable of stimulating and sustaining the organization, or endows it with qualities inimical to the healthy exercise of the functions, may depress or enfeeble the powers of life. This is observable in those cases in which the process of hæmatosis is so imperfectly performed that the blood is deficient in red globules, has not its usual proportion of fibrinous particles, and is thin, pale, and watery. We not unfrequently meet with individuals whose blood is in this state: and in some instances we have seen it so thin and watery, as not to exhibit a deeper hue than very weak claret and water. This is often the case in some of the hydropic affections, and is doubtless owing to some change, or morbid condition, of the apparatus of sanguification. But whatever its cause may be, its natural and inevitable consequence

will be, to debilitate the organization, either by not being capable of furnishing the tissues with a requisite supply of nutritive molecules, or of exciting and maintaining in them those impressions which it is its province to sustain. The correctness of these principles are established by numerous facts and observations. It was long since observed by BARTHEZ, that the nerves exercise an important influence on the blood; and some recent experiments of DUPUY,* veterinary professor of Alfort, have demonstrated, that when the pneumogastric nerves of a horse are divided, the blood becomes gradually deprived of its fibrinous matter, and of course rendered thinner and less stimulating. In one case, indeed, in which he performed this experiment, he found the blood of the animal perfectly dissolved and incoagulable; and a portion of this fluid injected into the jugular vein of another horse, was instrumental in developing a gangrenous condition. It is probable, as has been remarked by ANDRAL, that the alteration of the blood which takes place after a section of the pneumogastric nerves, is owing to the embarrassment of the respiration which ensues, a necessary consequence of which is a disturbance or interruption of the process of hæmatosis. But let this be as it may, one thing is certain; the blood derives its stimulating and nutritive properties from its red globules and fibrinous particles, and whatever tends to diminish these, will enfeeble the organization, and whatever increases them, will, for the same reason, augment its activity. It has, indeed, been clearly shown by the researches of PREVOST and DUMAS,† that even the calorific faculty of the blood is increased, in a direct ratio with the augmentation of its red globules. The power of generating animal heat being therefore diminished by the diminution of these globules, the organism becomes thus deprived of another source of stimulation to which it is accustomed, and is of course debilitated in proportion.

Whenever the respiratory function is interrupted or embarrassed, the depurative function performed by the lungs is of course disturbed in the same degree. The heterogeneous particles, therefore, which are thrown off through this channel, while the function is exercised in a healthful manner, are allowed to accumulate in the blood, and these floating the rounds of the circulation, they necessarily derange or enfeeble the actions of the living solids. This is especially true of the carbonaceous particles, which it is the province of the lungs to eliminate from the mass of circulating fluids; and as we have already observed, on the authority of the experiments of BICHAT, that the

* Andral *Traité d'Anatomie Pathologique*. Tome 1. † *Annales de Chimie*.

black or unaëriated blood paralyzes the left side of the heart, it necessarily follows, that when the blood is not submitted to the usual changes effected by the respiratory function, its whole mass gradually acquires the properties of this black or venous blood, becomes unfit for the purposes it is intended to subserve, and weakens or paralyzes the whole organization. This is well exemplified by what takes place in asphyxia. Here, in consequence of the suspension of respiration, the blood becomes loaded with carbon; the heart ceases to act; the muscles are paralyzed; the senses fail; the faculty of intelligence is suspended; and there is an apparent extinction of all vestiges of animation. The organization may, however, be still aroused in many cases, and the functions be restored. Supply the blood again with oxygen, which is not only its vivifying principle, but also the instrument by which it is divested of its carbon, and the heart, aroused by its natural stimulus, will again contract; the other organs will be gradually brought into play, and the whole of the functions resuscitated.

Another cause by which the organization may become debilitated, is a defect of nutrition. We have already seen how an abstraction of nutritive aliment produces this effect; but what we wish now to illustrate, is that deficiency of the function in question, which is dependent on some state of the organization itself. The perfect integrity of the structure and of the proportions of the tissues are preserved, as well as the healthful play of their functions, by a just and proportionate deposition of nutritive molecules in the situations which they should occupy, and their removal from those situations as soon as they become useless or unfit for the sustenance of the organism. By this process, the various tissues grow and are supported, are modelled into appropriate forms, are preserved in these states during the term of our existence, and are fitted for the important destinies which they have to subserve. Whatever mode of action or modification of the properties of the living solids accumulates these molecules in a ratio disproportionate to the natural order of their removal, alters the relations, and augments the volume of the tissue or organ, in which such action takes place, thus giving rise to a genuine state of hypertrophy. Whatever prevents a due deposition of these molecules, also occasions a diminution of the volume, or atrophy of the organ. As, therefore, the natural energy of every portion of the human organism necessarily implies the full integrity of its organization, whatever impairs that integrity must abate its powers in a proportionate degree, as well as the activity of the organs with which it is in relation, and with which it exercises a reciprocity of influence. This

is precisely what takes place under the circumstances which we are considering. An atrophy of the brain will thus enfeeble the intellectual powers, as well as the process of sensation and innervation. An atrophy of the heart will debilitate its propulsive agency—will render it incapable of driving the blood throughout the organization, and its different portions, deprived of the nutritive and stimulating influence of that fluid, will fall into a state of inactivity altogether incompatible with the regular performance of their functions. The same state of the muscles will enfeeble their powers of contraction—of the liver, will render it incapable of secreting healthy bile—of the kidneys, healthy urine, and the same of all the other portions of the living organization. The debility is not merely confined to the organ which is atrophied, but extends to all those organs or functions, over which such organ has any controul, or with which it has any very intimate sympathetic relations. A considerable share of the debility which takes place in many chronic diseases is doubtless owing to this cause; and in the decrepitude of old age, we have its influence well exemplified.

§ 2. *Indirect Debility.*

But we must now pass to the consideration of what we have designated indirect debility, or that form of the condition under investigation which does not depend either upon the abstraction of stimuli, or the operation of causes which produce a direct enfeebling of the powers of life.

Debility of this kind may arise from a great variety of causes, some of which operate with great promptitude, while others only produce their results by a gradual impression. To many it may appear a solecism to say, that the organization may be enfeebled as well by too much excitement, as by a deficiency of the natural stimuli which sustain its different operations; yet daily, nay hourly, experience furnishes us with numerous exemplifications of the truth of this proposition. We rise in the morning refreshed and invigorated, yet by the exercise of our daily pursuits and occupations, together with operations of the various stimuli, both physical and mental, to which these subject us, we find ourselves feeble and languid as night approaches, and at length thrown into a state of debility, or exhaustion, from which we are only relieved by the recuperative influence of sleep and repose. By inordinate exertion, or fatigue, the susceptibilities of the organization seem to become blunted or exhausted, and are rendered incapable of reacting with their wonted energy under the influence of common impressions, and require, while in that state, a stimulus

of unusual intensity to produce any impression. Thus, when we look for a few seconds upon a luminous body, the susceptibilities of the retina are so much enfeebled by the strong impression which is made upon that membrane, that all other objects appear dark and indistinct, or when we pass suddenly from the light into a dark room, we are unable at first to distinguish the objects which surround us, and only acquire that power after a sufficient time has elapsed to admit of the sensibility of the retina becoming restored so as to perceive under the influence of the feebler degree of light to which it is now exposed—an effect which is also facilitated by the dilatation of the pupil to such a degree as to admit of the passage of a larger quantity of light to the bottom of the eye than was transmitted before; quantity, under these circumstances, compensating, to a certain extent, for intensity: so it is also with those who have been long addicted to the abuse of inordinate stimuli. At first they produce their usual effects; yet by frequent repetition the receptive powers of the organism become gradually worn down to such a degree that an immense dose is required to exercise any marked influence. This is well exemplified in the temulent stage of mania a potu, in which we are often obliged to resort to the most powerful stimuli to sustain the energies of the system. The long-continued exposure to the stimulating influence of a tropical summer, frequently debilitates to such a degree as to render all exertion irksome; and by the violent excitement of a fit of anger, or a paroxysm of joy, the whole energies of the muscular system are sometimes completely exhausted, and a debility amounting to complete syncope, is not unfrequently induced. The principle under consideration is strongly illustrated by the effects of lightning. The influence of this agent is well known to be powerfully stimulating; yet when animals are destroyed by it, all traces of excitability are so completely annihilated, that the organization cannot be aroused by the most energetic stimuli.

This law of the human organism should always be borne in mind, as it furnishes an explanation of many pathological phenomena; and its application to the elucidation of many states of disease by Brown, Darwin, and Rush, has, we conceive, done much to explain many conditions which were previously not well understood. The extent of the debility induced must of course vary materially according to the intensity of the cause; in some cases being confined for the most part to a single organ, but frequently occupying a wider range. It is probable, however, that most of these causes operate by giving rise to local congestions.

It has been stated, in a preceding part of these observations, that

debility had been divided by Hufeland into true and apparent. Of the latter form, examples are of frequent occurrence, and are often calculated to lead the practitioner into fatal errors. Indeed, it will be found, on a careful examination of the subject, that a large majority of the cases of debility which fall under the observation of the physician, are of that character; and the principal share of his success in the treatment of disease, must, consequently, depend upon a correct appreciation of the several conditions from which it takes its origin.

Of this apparent debility we have an exemplification in that state of the system in which the play of the organs is either embarrassed by a congestion of their vessels, or by an exaltation of irritation in one or more organs, with a corresponding diminution of the vital actions in some other part of the system. The latter, however, appertains properly to the third division of our subject, but the former may be considered here, though it cannot, with strict propriety, be separated from that form of debility which proceeds from the concentration of irritation upon one organ at the expense of others; the congestion by which it is produced, when it does not arise from mechanical causes, always proceeding from the inordinate irritation of the tissue, which is instrumental in inviting an increased determination of fluids to the point.

This is a form of debility which is often met with in practice, and is frequently embarrassing to even the most experienced physician. When these congestions take place in the encephalic organs, they impair the various vital actions which are influenced by that apparatus, in different degrees, according to their extent. This they seem to accomplish by compressing, as it were, the encephalic mass, so as to place it in a condition altogether incompatible with the exercise of its natural controlling influence. The intellect is impaired; sensation is rendered obtuse; vision becomes double or incomplete; the faculty of hearing is enfeebled; the muscles refuse to perform their office; respiration is embarrassed, and becomes slow, deep, and laborious; or quick, hurried, and panting; the functions of the lungs are interrupted; the process of calorification is imperfectly executed; the skin becomes cold, mottled, or livid; the influence is propagated to the ganglionic nerves; the heart becomes oppressed; the pulse feeble and slow, or hurried and irregular; the stomach and intestines are involved in the general mischief; the secretory organs cease to perform their functions and become oppressed with an overwhelming congestion; and such a general embarrassment of the powers of life is developed, that unless reaction should come to the assistance

of the oppressed organs, death sooner or later takes place; and even when this reaction does occur, and is effectual in overcoming the congestions, it not unfrequently leads to destructive consequences, by the violent inflammation which ensues. Thus we may have, under these circumstances, all the intermediate degrees of debility, from that which depends upon a slight congestion, up to the complete obliteration of the powers of sensation and motion, which attends a profound grade of apoplexy. Yet it is manifest that the debility is only apparent; for liberate the oppressed organs from the load which burthens their operations, and they will resume their functions without any other assistance; stimulate them, and the oppression is increased, the congestions will continue, and life will become extinct. The same observations will apply to extensive congestions of the gastro-intestinal and bronchial mucous membranes, of the skin, of the tissue of the lungs, of the liver, spleen, and other organs, which perform functions of vital importance in the economy of the individual. Even the heart itself, the great fountain of life, may become so embarrassed by an accumulation of its own contents, as to be unable to perform its office, and thus occasion a general enfeebling of the powers of the system, which can only be removed by those means which are calculated to overcome the congestion. Congestions of the kind in question, especially those of the capillaries of the gastro-intestinal mucous membrane, always attend the cold stage of an intermittent fever, and are, indeed, the efficient cause of most of the leading phenomena which attend that stage of the disease. The subdued form of irritation which remains in that tissue, and in the adjacent organs after the termination of the paroxysm, invite the circulation to that point, in consequence of which, a gradual congestion is developed, which continues to increase until it has the effect of giving rise to reaction, by which an exacerbation is excited, which does not subside until the irritation awakened, or rather exasperated by the vascular congestions is abated, or subdued, either by a free secretion or by the process of revulsion. The debility thus induced is always considerable, and sometimes so overwhelming as to destroy life in the space of a few minutes. A concurrence of circumstances somewhat similar, is doubtless the principal cause of the predominant phenomena which attend the mortal spasmodic cholera. Here, however, the congestions are more overwhelming, the sympathetic concatenation more extensive and important, and consequently, the results are in a proportionate degree of a more formidable character. The extent of the congestion is, indeed, frequently so great, under these circumstances, that death ensues before reaction can take place.

The debility is truly alarming; yet it is only apparent. The powers of the system are only oppressed, not exhausted; and as soon as the congestions are removed, the natural powers of the organs are unfolded, and show themselves competent for all the powers of life, and, indeed, frequently manifest a degree of energy too active to be consistent with their safety. We may compare the debility which arises from causes of this kind, to that paralysis which proceeds from compression of the brain, spinal marrow, or some important nerve. The powers are suspended, not extinct. As soon as the compression is removed, they are again developed, and seldom require to be invigorated by the assistance of art.

It has been very correctly remarked by Boisseau,* that debility may either manifest itself by a diminution of the nutritive power of a tissue, or organ, or by an abatement of its functional energies. The correctness of this proposition is established by many of the instances of debility which we have detailed. In some we have seen that the function alone seems to have sustained the entire onus of the debilitating cause, while in others, this has been borne principally by its power of nutrition. Yet it must be confessed, that neither of these conditions can continue for any considerable period, without implicating the other; for the perfect exercise of a function requires the complete integrity of its structure, and whatever abates or suspends the process of nutrition must of course abate the ability of the part concerned to execute its proper office. Thus the violent congestions of which we have just spoken, are at first purely functional; but soon this derangement leads to other consequences: the faculty of nutrition becomes disturbed; the molecular arrangement of the tissue becomes changed; its physical properties become altered, and its vitalism becomes either increased or diminished. Still, however, a tissue may be inordinately excited, as regards its nutritive functions, while it may be enfeebled as regards the exercise of the function which it performs in the economy of the individual. Take, for example, the mucous membrane of the stomach. When thrown into a state of sur-excitation by the operation of an inordinate stimulus, its circulation is increased; its vessels become distended; its secretions are augmented; its sensibility is increased; it may acquire an accession of substance; yet it cannot digest. It rejects the aliments which are brought in contact with it, or suffers them to pass unchanged. Its function is completely suspended, and as far as that is concerned, it is absolutely debilitated, although in

* Loc cit.

other respects its action is increased. This coincidence occurs in many diseases, and in those of a chronic character especially, has led to many fatal errors in practice. Take, for example, that state of the digestive organs which has been generally designated by the vague and unmeaning appellation of dyspepsia. Physicians, acting upon the supposition that the state of the organ under these circumstances is debility, have directed all their means to invigorate its powers. They have not reflected that the delinquency of function is owing to a subacute irritation of the mucous membrane, which renders it incapable of digesting. What has been the consequence? Stimulants and tonics have been freely plied, with a view of imparting tone to the enfeebled organ; the irritation is exasperated, and the food is rejected or passes through undigested. More active stimulants are resorted to, and the difficulties are augmented. Debility is yet the ruling consideration—stimulants and tonics the remedies for its removal. They are, therefore, reiterated and varied to infinity, until at length the tortured stomach, no longer able to endure the constant irritation to which it is submitted, is subjected to a profound disorganizing process, and the life of the patient is either sacrificed, or he only escapes by seeking some watering place, and thus getting clear of his physician, and his farrago of bitters and blue pills. Happy would it be for man were these errors confined to dyspepsia. But unfortunately there is scarcely a disease, either acute or chronic, in which they are not frequently committed. This important truth did not escape the observation of the philosopher BAGLIVI. “*Abusus accusandi fictam quamdam in morbis malignitatem medicis frequenter imponit—errores hinc in methodo curativa committunt, per quos morbus graviter exacerbat. Malignitatem medicamentis calefacientibus aggrediuntur, quibus non solum non submovetur, sed viscerum inflammatio magis magisque adaugetur.*”^{*} Indeed, errors of this kind are so frequently committed, that it is impossible for any one who has been at all attentive to principles, to take even a glance at the usual therapeutic procedures which are adopted, without being struck at the deplorable consequences to which they lead. Nearly the whole category of chronic phlegmasiæ are too often submitted to the perturbing and incendiary practice, and not a few of the disorganizations, dropsical effusions, and other irremediable conditions which constitute the finale of these affections, are more owing to this destructive system of stimulation, than to the natural and necessary tendency of the malady. But, thanks to

the genius of Broussais, these affections have been 'arranged in their proper characters, and those who have profited by his lucid and philosophical exposition, have ceased to regard them as entities, merely dependent upon a simple feebleness of the solids, and have been awakened to the important conviction, that these manifestations of debility, are the natural and inevitable consequences of the ravages of irritation upon the living tissues. This irritation subdued, all traces of debility disappear, the natural play of the organs is restored, the functions resume their healthy exercise and regain their natural vigour. Stimulate the suffering organs, and this latent irritation is exasperated, the sympathies extend its influence to the other organs and systems; new sufferings are developed, new lesions brought into existence, the functions become more and more crippled, the treacherous manifestations of debility increase with steady pace, the tendency to disorganization or to profound and incurable structural changes steadily advances, until the individual finally falls a victim to the very means instituted for his relief. No circumstance has tended more to favour the propagation of these fatal opinions, than the belief in essential or idiopathic fevers. As long as diseases are regarded as entities, universally diffused throughout the organism, having no special locality, but floating in the blood, travelling along the nerves, accumulating in the glands, and mingling with every tissue and organ of the body, all ideas of local irritation are of course overlooked; its manifestations are taken for the disease itself, and the physician, carried away by such speculations, bewilders himself in fruitless inquiries relative to this hidden entity, or this inscrutable, intangible minister of mischief, and founds his indications upon no more certain data than the mere accidental contingencies exhibited by the outward manifestations of the suffering organs. Indeed, many console themselves with the belief, that the malady will run a definite course in despite of all treatment—that it must pass through a regular series of revolutions and counter-revolutions, before it can be brought to a termination—that the vires medicatrices of the system are alone competent to ward off or vanquish the evils which prey upon the system—and that their only duty is to watch symptoms, to brace up the powers of the system, to enable them to bear up under the conflict which is carried on between them and the invading foe. The symptoms of debility, which are a necessary consequence of the intense irritation with which the tissues are involved, is estimated as a part of this imaginary entity, and to remove them is considered the leading object of the physician. Their presence is construed into an evidence that the powers of the system are unable to struggle with

the disease. These powers must of course be fortified; cordials and tonics are regarded as the only chance of salvation; wine, quinine, camphor, and ammonia as the unicum remedium, and they are plied with an unsparing hand. The system must be supported—stimulation is the rational means. The debility continues—this is a signal for the continuance of the invigorating system: the tongue becomes dry and cracked, the secretions suspended, the muscular strength still more prostrated; more stimulants must be administered. Delirium and coma supervene, with hiccup and subsultus tendinum—these are symptoms of typhus, and typhus is a disease of debility; of course the most diffusible stimuli must be resorted to, and this wise course is continued until the patient is released by death. Let us then examine the organs, and see what is the condition exhibited by them? What, in effect, are the lesions observed after death, under circumstances such as we have detailed? When we expose the important viscera of the body, do we meet with nothing but evidences of debility? True, we encounter every thing to explain the symptoms of asthenia, yet it is not a condition of pure debility involving the organs and texture, but a weakness of function proceeding from an intense degree of irritation, implicating the tissues essential to life, which renders them incompetent to discharge their offices in the economy; a debility not dependent upon a deficiency of action, but upon an inordinate excitation of the living structures—a state arising from a struggle between life and death—not to be removed by stimulants, but constantly exasperated by such means; the natural tendency of which is to disorganization, which can only be prevented from taking place by the employment of those remedies which are calculated to subdue or transfer irritation. We find the gastro-intestinal mucous membrane inflamed, in a state of ramollissement, frequently studded over with ulcerations, and sometimes completely disorganized; occasionally thickened or attenuated, in some instances detached and flocculent, or firm, compact, and resistant. Its secretions are altered; its colour is frequently changed; its vessels are congested; and not unfrequently small quantities of blood are effused upon its surface. We find the substance of the brain injected with blood, presenting a preternaturally vascular appearance; its texture softened or indurated, sometimes almost pultaceous; its serous membranes inflamed, not unfrequently coated with plastic lymph, with its surfaces adhering, or separated by a serous effusion. We encounter similar lesions in the spinal marrow and its coverings. The medullary substance of the nerves is also sometimes involved; their neurilema is turgid with vessels, and inflamed; the ganglions are of a deep red

colour, and occasionally injected with a sero-sanguinolent fluid. The pulmonary mucous membrane is also frequently involved; the liver is perhaps congested or softened, and the kidneys sometimes bear evidences of a similar condition. Shall we be told that these are evidences of a state of pure debility? that simple weakness of the organization can produce ravages such as these? Yet all the lesions which we have detailed, are commonly met with after violent cases of typhus; all the symptoms which we have described are the ordinary attendants upon that disease; yet, say the essentialists, typhus is a disease of debility; and when they are shown these lesions, they gravely affirm, that they are merely accidental consequences of the fever. But can a state of simple, uncomplicated weakness produce disorganization? We think it cannot. Such a result can only be produced by irritation, and when it does supervene upon a state of asthenia, it is always in consequence of the supervention of irritation upon the latter condition. True, disorganization may take place in a tissue or an organ, while it is labouring under a state of functional weakness; yet, under these circumstances, we have not a coëxistence of nutritive debility; for the very imbecility, manifested by the functional operations of the organ, is a consequence of the irritation of its tissue. Shall we then endeavour to overcome inflammation of the stomach, by throwing into it remedies to make it digest? to subdue inflammation of the brain by exciting the passions and emotions of the mind? or to relieve inflammation of the lungs by accelerating its alternate collapse and distention? We think the essentialists themselves would scarcely contend for the correctness of this practice; yet it would be a fair and legitimate induction from the leading principles of their doctrine. The debility is secondary, and is a natural consequence of the irritation, which implicates the nutritive operations of the tissue affected, and disappears as soon as that irritation is subdued, or is transferred. All the phenomena of debility which attend the worst cases of typhus grow out of this state of irritation: all those circumstances which have incurred for that disease the appellations of putrid and malignant, are referable to the same condition of irritation, and can never arise from a mere want of action in the living structures. Mere weakness cannot produce increased heat and frequency of the pulse, intense thirst, and a dry, parched skin: it cannot give rise to a suffused countenance, a red and fiery eye, watchfulness and intolerance of light, hurried respiration, pain and uneasiness in the different organs, delirium, coma, mania, subsultus tendinum, and the various other phenomena which accompany typhus and other fevers. They can only be developed by irritation; it always precedes them, and is their generating

cause. They are constantly regulated by its intensity, are exasperated by whatever aggravates it, and are mitigated by whatever mitigates, or subdues its intensity. The assemblage of circumstances, which characterize the condition called malignancy, have a close relationship with the progress of the irritation to structural changes and disorganization, and constantly accumulate in proportion to the approximation to these conditions. The mucous membranes are probably the parts first involved, and the functions which they execute are, therefore, the first to become enfeebled by the irritation which implicates those structures. But constituting as they do, the centre of sympathy, and having most of the other organs ingrafted, as it were, upon them; the irritation irradiates from this point, into the various tissues and systems, in proportion to the intimacy of their sympathies, involves their structure, alters their functions, and breaks up all the regular operations of the system. The heart and arteries are stimulated to increased exertion; the process of calorification is rendered more active; the nervous system is excited; the secretions are increased, or locked up by the intensity of the irritations; and all those symptoms are developed which characterize the first stage of excitement. Important molecular alterations are, however, going forward at the same time, in the different tissues which are implicated, and in proportion as these increase, their functions must, of necessity, become impaired. The pulpy substance of the brain and nerves especially, soon become so much altered, as to disqualify them for the execution of perfect innervation, and the organs which they controul being deprived of their influence, are no longer able to perform their healthy functions. The action of the heart and arteries is modified; the play of the lungs is embarrassed, or the process of decarbonization is not properly executed; calorification is diminished; the blood is imperfectly animalized; it is rendered unfit for the purposes of life; the capillaries have their contractility enfeebled; their contents are retarded in their progress; the blood becomes black, and has its red globules diminished, loses its power of coagulation, and escapes from the mucous and cutaneous surfaces, or is extravasated beneath the cuticle, in form of petechiæ. The membranous envelopes of the nerves being, moreover, implicated, submit the nervous mass to an incessant irritation, which sometimes produces irregular twitchings, or subsultus tendinum, or they compress it, in consequence of becoming thickened or turgid, so as to occasion a condition analogous to paralysis, and thus give rise to all the phenomena which we have just detailed. The natural tendency of either of these conditions is to produce a profound prostration of the muscular power, which is,

moreover, increased by the concentration of the irritation upon the diseased organs, thus leaving the others devoid of their usual quantum of excitation. The same observations we have made relative to typhus, will apply, with slight modifications, to the other essential fevers of authors; in all of which it will be found, that irritation is the leading condition of the disease, and the debility merely a consequence of the sufferings of the organs. It is no objection to the validity of this conclusion, that stimulants are often necessary, and frequently successful, in the treatment of these diseases. They may become necessary to create revulsion, which is an important means of overcoming diseased actions; or we may be obliged to resort to them, to maintain the nutritive operation of those tissues and organs, which become deprived of their requisite degree of excitation, in consequence of the transfer of the irritation to the affected part. This, however, will be better understood under the next division of our subject.

§ 3. *Metastatic Debility, or Debility from the Inordinate State of Irritation of one or more Organs, the others being thus left in a Diminished State of Excitation.*

It has been stated, in a preceding part of these observations, that no impression can be universally and simultaneously diffused throughout the entire organism. The tissues, being endowed with different degrees of susceptibility, do not respond with the same readiness to the action of external agents; and as these agents must necessarily operate upon one of them before its influence can be propagated to another, it follows that all impressions must irradiate from a central point, and be thus spread by sympathy into the different portions of the system. It is not necessary from this, however, that all these impressions must be eventually felt by the entire organism: on the contrary, the influence of many of them is much more circumscribed, and does not extend far beyond the organ which constitutes its primary recipient; and even the impression awakened by a powerful stimulant, while it excites inordinately one or more tissues, has a tendency to debilitate or diminish the activity of the others. Thus, it frequently happens, when the gastro-intestinal mucous membrane is intensely irritated, that the skin is cold, flaccid, and inactive. The same form of irritation frequently produces great prostration of the muscular energy; diminishes the activity of contractions of the heart, and suspends the secretions of those glands which are only mediately connected with the alimentary canal. In diabetes, in which the kidneys are preternaturally excited, we find the skin remarkably dry and harsh to the touch; and reversely, in many in-

stances, where the cutaneous transpiration is inordinately augmented, the secretion by the kidneys is abated in a proportionate degree. The operation of this law is, moreover, well exemplified by what takes place during pregnancy. Under this state of the system, the uterus and its contents levy heavy contributions from almost every tissue and organ. They attract and concentrate upon themselves a large proportion of the irritation of the other systems, and leave them in a state of inactivity, amounting, in some instances, to a considerable degree of debility. The digestive function is enfeebled; the bowels become so torpid that they are unable to expel their contents, and require the stimulus of drastic cathartics, in many instances, to enable them to perform that office. The muscles are so much enfeebled that the individual is reluctant to take exercise, and is greatly fatigued by slight exertion; the mind is dejected and despondent; the sensations are frequently perverted; the secretions diminished, or altered in quantity and quality; and many other phenomena are developed which owe their origin to this supremacy of the uterine irritation, and the extent to which it draws upon the irritation of the other organs. It suspends the fatal progress of phthisis pulmonalis; it heals up old ulcers; cures or suspends many chronic diseases; breaks up many anormal concatenations, and sometimes effects such changes, that many of the diseased actions which it is instrumental in removing do not recur. It is in virtue of the same law, that a large class of our remedial agents, called revulsives, produce their effects; and it constitutes one of the principal hinges, if we may thus express ourselves, upon which revolves the treatment of disease. With what intention do we, in effect, resort to the application of blisters and sinapisms? the insertion of setons and issues? the employment of emetics and cathartics, diaphoretics, and diuretics? Our object is to transfer irritation, and, by localizing it in a new situation, to diminish or break up that in which the disease consists. In a case of pneumonic inflammation, for example, after the intensity of the pulmonary irritation has been somewhat subdued, we apply a blister to the chest, which, exciting there a new point of irritation, more intense than that which occupies the lungs, becomes a new centre of fluxion, to which the circulation is determined: it awakens new sympathies; breaks up the old concatenation of morbid phenomena; liberates the pulmonary irritation from the remaining irritation which involves it, and thus cures the disease. The same principles apply in other diseases, in which we resort to similar applications. The new irritation invites an increased determination; its nutritive actions preponderate over those of the part originally impli-

cated; the inordinate irritation of the latter is gradually broken down, and its actions are reduced to the healthy standard. But with a view of illustrating more fully the nature of our proposition, we will suppose that the blister is applied while the intensity of the inflammation remains unabated. What will be the consequence? We establish a new point of irritation, but as it is still transeended in intensity by the original affection, revulsion cannot be established; the exalted action which involves the diseased organ will not suffer itself to be diverted from its primary seat, and, consequently, the whole sum of irritation established by our remedial agent is transferred by sympathy to the diseased organ, it still constituting the more powerful centre of fluxion, and thus, instead of annihilating the primary malady, it tends to exasperate it, by adding new intensity. This is a fact that has been long known, but not correctly appreciated. The period at which it is proper to employ blisters, was called by Rush the blistering point; an appellation which very clearly expresses that condition of disease called by the advocates of physiological medicine the revulsive point; meaning by this term that state of the irritation of an organ which is sufficiently subdued to admit of a transfer of its inordinate excitation to a remote part, by the establishment of a new centre of irritation, or a new focus of sympathies. We act on the same principle in the treatment of many chronic diseases. It is with a view to these revulsive actions that we resort to perpetual blisters, setons, and issues, in the treatment of the first stage of phthisis pulmonalis; in chronic cephalitis; chronic arthritis; ophthalmia, and many other affections. We frequently heal old ulcers, which had resisted all other modes of treatment, by the insertion of a seton or issue. In apoplexy and inflammation of the brain, we sometimes derive very useful results from the employment of active cathartics, which tend to transfer the irritation from that organ to the mucous membrane of the intestines: and from the application of blisters and sinapisms to the extremities, by which a new point of irritation is established in those situations, which tends to centre in itself that in which the primary affection consists.

It is precisely upon these principles that a great share of that debility which constitutes such a predominant concomitant in many acute diseases, is produced. The inordinate irritation of the organ or organs principally affected, concentrates, as it were, the whole of the irritation of the system upon themselves, employs it in their inordinately excited nutritive operations, and thus leaves the other tissues and organs in a state of inactivity or debility. Let us, for example, trace out the phenomena which attend the development of a

paroxysmal disease, and see how far this explanation will enable us to furnish a rationale of the symptoms. Diseases of this character always have their starting point in some local irritation, generally seated in the gastro-intestinal mucous membrane. The excitation in this tissue being therefore inordinately intense, the fluids of the body immediately take on a centripetal tendency, the whole irritation of the system centres itself upon this point, the other organs languish, their functions are disturbed, and the natural harmony of the healthy actions is completely broken up. How are these changes manifested? The individual complains for some time of a feeling of *malaise* about the epigastrium; he loses his appetite; is troubled with eructations; his tongue is furred; his secretions deranged, and his bowels frequently constipated. These symptoms show themselves at an early period, and are the first consequence of the gastro-intestinal irritation. As yet, however, the influence of this sur-excitation is not widely diffused; it merely manifests itself in a slight functional debility of the part implicated; the other functions being only slightly enfeebled. As the irritation increases, however, and the sanguineous determination becomes more considerable in consequence of it, the influence becomes more widely diffused; the nutritive actions of the various tissues, which are, by this centripetal determination of the circulating fluids, deprived of their necessary degree of excitation, fall into a state of debility more or less considerable, in which they continue until their irritation is restored; the skin becomes pale, cold, and shrivelled; the muscles feeble and tremulous; the action of the heart languishes; the pulse is frequent and small; the secretions are locked up; the intellectual operations are rendered imbecile and unsteady; the senses are enfeebled; the process of calorification is suspended, in consequence of the nerves being deprived of their necessary excitation; the blood is imperfectly decarbonized; it is not propelled with sufficient velocity through the capillary circulation; a general coldness diffuses itself over the surface of the body; the individual complains of a sense of heat and oppression about the epigastrium: strong rigors are developed, and, in short, all the phenomena which characterize the cold stage of an intermittent fever take place. Under these circumstances, therefore, we have a strong degree of debility developed in most of the tissues and organs, by a metastasis of irritation from the circumference towards the centre. Yet they are not all debilitated; for the gastro-intestinal mucous membrane, we have seen, is in an inordinate state of excitation; so much so, indeed, that its actions become supreme, and draw, with unsparing demands, upon the resources of the organs. Soon, however, this

very irritation becomes a means of restoring the nutritive operations in those tissues which it before tended so powerfully to enfeeble. As soon as its intensity has transcended a certain point, it begins to excite the languishing organs, in virtue of its sympathies with them; the heart regains its power, and is even thrown into an inordinate state of action; the pulse becomes full and strong; the faculty of calorification is restored; the skin becomes hot; the eyes turgid; the face flushed; the mind excited; the senses painfully affected by external impressions, and we have all the phenomena of reaction established, or what has been generally designated a paroxysm of fever. This, then, is the whole mystery of the cold stage of an intermittent fever—this the nature of those chills and rigors which so often attend various other affections. There is nothing specific or incomprehensible in the matter. It resolves itself into a simple condition of local irritation which robs the other tissues, as it were, of their power, debilitates their nutritive and functional operations, until their equilibrium is again restored. It cannot be owing to any thing specific in the mode of irritation itself, or in the cause by which it is produced; for it is excited by the introduction of a bougie into the urethra, by a stone in the bladder, by a foreign body lodged in the flesh, by a simple phlegmonous inflammation, and by erysipelas. Indeed, any local irritation, the influence of which extends far enough to controul the circulation, may give rise to it, and by attending to the law which has been laid down, and which constitutes one of the great principles of physiological medicine, the cold which accompanies so many forms of local irritation, can be as easily understood, as any other manifestation of diseased action.

By the same transfer and concentration of irritation, we can explain much of the debility which attends most acute and chronic diseases. It takes place in all the essential fevers of authors. It is strongly manifested in bilious remittent, in yellow fever, in typhus, and the plague. It is seen most strikingly in cholera and gastro-enteritis from poisons and other causes, which impart to it its most intense grade, and indeed there is scarce a form of disease in which the debility from metastasis of irritation is not more or less developed. In the *lipyria* of GALEN and the Greek physicians, the surface of the body was found cold and almost lifeless, while the patient seemed to be consumed by an inward fire. The same thing was observed in the *kausis*, and is met with in most of the febrile affections of the present day. This, however, is not pure debility. Irritation is its generating aliment, brings it into action, sustains it, and again annihilates it. Equalize this irritation, and restore the equipoise of the

action of the organism, and the debility disappears; the nutritive actions are restored, and the functional operations are reëstablished. These principles must never be lost sight of in the treatment of disease. They are the only means by which we can be conducted to a correct pathology, and the only guide to a safe and successful therapeutics. A neglect or ignorance of them, it is to be feared, has been and is still, a means of immolating thousands and tens of thousands of annual victims upon the frightful shrine of debility; and until the minds of physicians can be released from the bondage in which they have been trammelled by this bugbear, the achievements of the healing art must ever have their value greatly abated by its numerous defeats.

We have thus endeavoured to pass in review the several conditions of the system which have been generally designated states of debility or asthenia. Some of them, we have seen, are unquestionably such; but by far the greater number, and, indeed, all those which are observed in the course of acute diseases, are only indirectly so, owe their origin to a process of sur-excitation in some one or more of the tissues, and should consequently be regarded as accidental concomitants and of secondary consideration; the irritation constituting the source of the disease, and the germ of all its manifestations. This we trust will show the danger, nay, the destructive consequences of the indiscriminate employment of stimulants, during the early stage of acute, and indeed many chronic diseases. Such a practice, while it cannot subdue the debility, must inevitably exasperate the malady, and hasten the process of disorganization. We would not, however, be misunderstood. There are many acute diseases in which stimulants will be found safe and indeed indispensable remedies. The nutritive actions of the debilitated tissues may be so much enfeebled as to endanger life, while the irritation continues in the organs which constitute the seat of the disease. Here will a judicious employment of stimulants be necessary to arouse these nutritive operations to a sufficient degree of vigour to preserve them against destruction; they will also prove useful by exciting revulsion. But even here the utmost caution must be observed. Every step we take involves a question of life and death, and an error of judgment may compromise the salvation of our patient.

Baltimore, 1831.

ART. VII. *Observations on the Bilious Remittent Fever, which prevailed in Burke County, Georgia, during the Summer and Fall of 1831.* By A. C. BALDWIN, M. D.

IN my remarks on the bilious remittent fever, which prevailed in Burke county, during the summer and fall of 1831, I shall confine myself to a description of the disease, as it appeared in that section of the county where I reside, and to a general summary of the treatment which was adopted for its removal. The weather immediately preceding its appearance was uncommonly wet, scarcely a day passing without one or more showers of rain. As the rains diminished, and the water began to evaporate, cases of fever commenced making their appearance, and in a short time the disease spread rapidly over the country. In many places entire families were attacked, and in my immediate neighbourhood, scarcely an individual escaped. A chill, preceded by languor and lassitude, as is common in all febrile affections, and accompanied with an uneasiness in the head, generally gave the first notice of an attack. The duration of the cold stage was various. With some it was scarcely perceptible, and disappeared in a short time; with others, so great was the oppression, characteristic of the disease, that reëction was retarded in its appearance, and a chilly sensation, alternating with feverishness, continued during the day. Many complained of having had two and three chills in twenty-four hours; and some asserted that their chill had continued for several days. By opening a vein, a stop was put to these symptoms, the pulse, though before oppressed, became full, hard, and bounding, and the second stage commenced. The skin was sallow, and the eyes presented a similar appearance. All complained of a bitter taste in the mouth, and an intolerable thirst was universally present. The tongue was covered with a dark brown fur; and there was a sense of weight at the pit of the stomach, accompanied with nausea and occasional vomiting, the matter ejected consisting principally of green bile. Most persons complained of griping, and costiveness was a common attendant of the disorder. There was a violent pain in the head and back, and occasionally a pain in the region of the liver. The skin, generally speaking, was hot and dry. In a few cases copious sweats broke out without being productive of any apparent benefit, but on the contrary were of manifest injury. Bleeding at the nose occurred occasionally, and was always followed by an alleviation of the disease. Delirium was sometimes present, and some complained of troublesome dreams, though the mind in general was but little affected during the con-

tinuance of the fever. The remission usually took place in the morning, although the fever was in many instances as high in the morning as it was at any other period of the day. Among children convulsions were very common, and among them the disease proved more fatal than it did among adults. When neglected, or when the cure was entrusted to inefficient remedies, or when the sulphate of quinine was administered before the system had been properly reduced by evacuating remedies, an enlargement of the spleen, and frequently to an enormous size, was the inevitable consequence. Relapses were very common, and were generally, and justly, attributed to too free an indulgence of the appetite, the desire for food being so great after a recovery, as to be almost unmanageable; and from this cause only, many suffered two or three attacks of fever before the commencement of cold weather.

In the early part of the summer, the fever was easily managed. An oppressed state of the system appeared to constitute the disease, and clearly pointed out the indication to be fulfilled. A single bleeding, followed by a mercurial cathartic, and its operation hastened by a dose of salts or oil, frequently put a stop to the disorder, and the patient rapidly recovered. The beneficial effects of blood-letting were peculiarly obvious at this season of the year; a speedy restoration of strength, and a great alleviation of suffering, rapidly succeeding its employment. But as the season advanced, the disease put on a more obstinate character, and it became necessary to call in the aid of other remedies, and to push the bleeding and purging to a much greater extent, before the excitement was reduced, and the secretions and excretions restored to a more healthy condition. One, two, and even three bleedings were frequently required to relieve the vessels of the head, and to equalize excitement; and it was my common practice to give ten, twenty, and sometimes thirty grains of calomel at a dose, and to follow it in two or three hours with an ounce or more of castor oil, and to continue it daily until the alvine evacuations assumed a more healthy appearance, and ceased to be so peculiarly offensive. Nor did I ever have reason to doubt the propriety of the plan adopted: for as the bowels became unloaded, and the discharges assumed a more natural appearance, as they always did when enough medicine was taken to produce active purging, the fever proportionably diminished, and patients quickly became convalescent. When, from disgust, or any other cause, the oil could not be taken nor retained on the stomach, the Epsom salts, combined with senna, was substituted in its place, as an adjuvant to the calomel. But, in all cases where the oil could be retained, I gave it a decided prefer-

ence, and always believed it operated with more certainty, and was productive of more benefit, than any other article of the same class which I employed. Although calomel was administered with such freedom, salivation was seldom induced, nor was it in any case desired. Its occurrence I always looked upon as unfortunate, and to prevent it, as well as to assist in subduing excitement, hastened its operation by salts or oil.

The use of the lancet, and the free exhibition of purgatives, though to be chiefly depended on, and successful in a majority of cases, did not in every instance produce the effect desired, and it became necessary to call in the aid of other remedies in the management of some of the more obstinate cases; and the well-known compound of nitre, tartar emetic, and calomel, proved of essential service, by relaxing the skin and changing the character of the secretions. Emetics, though promising much, did not appear to suit the disease, and the stimulating practice was death. Blisters were not often required, and when used, they were applied for the relief of some local affection. A pain, accompanied with soreness in the region of the liver, which had not yielded to evacuating remedies, and for the removal of which, owing to other circumstances, it would not have been safe to have pushed the depleting plan to any greater extent, occasionally pointed out the necessity of a blister, and was relieved by its application. The same may be said of mustard plasters. They were sometimes employed for the alleviation of gastric distress, and for that purpose proved highly beneficial. Yet their employment was not often required, as the nausea and vomiting were mere symptoms of the disease, and disappeared proportionably as the fever was subdued. Opium in any form appeared always to be productive of injury, and in my practice was in all cases forbidden. The first case which terminated unfavourably under my observation, appeared to have owed its unfortunate termination to the injudicious employment of this drug. It occurred in a child five or six years of age, who had taken a large dose of Bateman's drops before I saw it, and at the time of my first visit, was stupified from its influence. The child died on the third day of my attendance, and during the time it survived its head never was relieved.

The excitement having been reduced, and the liver and bowels relieved, the fever disappeared, leaving behind nothing but debility, and the usual emaciation which follows all severe spells of illness. At this particular time, the sulphate of quinine, administered in one grain doses, three, four, and five times a day, in conjunction with a

mild and nutritious diet, aided by moderate exercise, proved of most essential benefit, the system gradually acquiring its accustomed vigour, and the usual plumpness of the body being restored in as short a time as could reasonably be expected.

Of a large number of cases treated as above but two terminated unfavourably; death in them appearing to have been produced by allowing the system to remain too long in a state of oppression; and had assistance been called for earlier, and the evacuant and alterative plan of treatment been pushed to that extent, which, from experience, had been found necessary in others, it is more than probable that these likewise might have been brought to a more happy termination.

Burke County, Geo. Dec. 20th, 1831.

MEDICAL EDUCATION AND INSTITUTIONS.

ART. VIII. *An Account of the Origin, Progress, and Present State of the Medical School of Paris.*

(Continued from Volume VIII. page 418.)

IN our preceding communications we presented to the readers of this Journal an historical account of the medical school of Paris, as well as an outline of its present organization, and promised to offer in subsequent essays a sketch of the plan of instruction adopted there, and the mode of electing professors. It is with the view of redeeming this pledge that we have undertaken the present essay. But before entering on the subject more particularly before us, we must be allowed to say a few words on the building in which the lectures of the School of Medicine of that city are delivered.

This pile was originally built for and occupied by the school of surgery. It was commenced in the year 1769, on the designs of the architect Gondouin, and completed seventeen years after. The school of surgery having, in consequence of the law of the 18th of August, 1792, been abolished, the building was left unoccupied until 1794, when it was transferred to the school of health, or medicine, which, as we have seen, was reorganized on the 14th Frimaire of that year. It is a noble edifice of stone, built in a quadrangular form and inclosing a large court of about sixty feet in depth and one hundred in breadth. The front of the entire building, on the street, is nearly two hundred feet in extent. The wings or sides of the quadrangle are united to each other in front by means of a peristyle consisting of four rows of Ionic columns, supporting a long covered gallery, in which is located a part of the anatomical museum of the faculty. The front of the transverse building at the bottom of the court, access to which is obtained by means of a passage situated in the centre of the colonnade and closed by an iron-grated door, is handsomely ornamented with six fine Corinthian pillars, of rather large dimensions, and supporting a triangular pediment, on which Berruer has sculptured the allegory of the union of theoretical and practical surgery. In this transverse building, which constitutes the main portion of the edifice, is situated the large anatomical lecture room, or amphitheatre. On the walls of this room, which forms the segment of a

circle, and is disposed in a convenient manner, are found four medallions, containing portraits of J. PITARD, A. PARE, G. MARESCHAL, and J. DE LA PEYRONIE, all of whom, as is probably known to our readers, were surgeons of great celebrity. The room is moreover ornamented with fresco paintings by Gibelin, and with busts of LAMARTINIERE and of LA PEYRONIE, by Lemoine. Upon the wall opposite the president's or professor's chair, is the following inscription:

“Ad cædes hominum prisca amphitheatra patebant;
Ut longum discant vivere, nostra patent.”

The room is sufficiently spacious to accommodate twelve hundred students. Extensive as this may appear to those unacquainted with the medical school of Paris, it will doubtless cease to be regarded so, when it is stated that the students in that city far exceed that number. Indeed, viewing the unprecedented size of the class, it may be affirmed with propriety that the room in question is too small; for though the students do not all attend the different lectures at the same time—though few of the lecturers generally attract a large audience, and though, in consequence, the benches are far from being always well filled, yet on some occasions the room is not only crowded to excess, but even a number of students are unable to gain admittance. In the council room, in which the faculty holds its meetings, and which is situated at the angle formed by the junction of the central building with one of the wings, there are many busts of the most celebrated French anatomists and surgeons. But the chief ornament of this room consists of the famous painting of Girodet, representing HIPPOCRATES in the act of rejecting the presents of the king of Persia. The rest of the lower floor is laid out in offices and lecture rooms.

On the upper floor of the left wing, as you enter, is placed the library of the faculty; while on the corresponding floor of the right wing, and in the covered gallery connecting the two side buildings, is located the museum. The former is composed of the books of the old faculty, of the Royal Society of Medicine, of the Royal Academy of Surgery, and of the old school of surgery. The collection thus formed was enlarged by purchases made by the faculty, from its restoration in 1794 to the moment of its suppression in 1823; and since that period by means of funds appropriated for that purpose by the university. The number of volumes at present amounts to about thirty thousand. The collection consists of works in the Greek, Latin, Arabic, French, German, English, Italian, Spanish, and Russian languages, principally on medicine and its accessory branches. They

are well arranged and classed in the following order: 1st. Medicine properly so called. 2d. Surgery. 3d. Obstetrics. 4th. Natural Philosophy. 5th. Chemistry. 6th. The different branches of natural history. Besides those on the preceding subjects, there are some works in the various departments of Greek, Latin, and French literature, books of travels and many other subjects having but an indirect relation with the science of medicine. The library likewise contains numerous manuscripts of ancient physicians of celebrity, commentaries in the hand writing of the Deans of the old faculty of medicine, from 1324 to 1786, the archives of the Royal Society of Medicine, of the Royal Academy, and of the old school of Surgery.

The library is opened three times a week during the hours of lectures—from 10 to 2. On these occasions, every one who wishes to read or consult any of the works contained there, is at liberty to apply; but the books must be returned as soon as no longer wanted, and are never allowed to be taken out without special leave from the librarian. On the other days of the week, Sundays excepted, those only who have obtained a ticket from the librarian, are allowed to enter and make use of the books only from 11 to 1 o'clock. They consist of the pupils of the *Ecole Pratique* and of candidates who have passed the fourth examination. On these days the library is thinly occupied, but on the public days the principal hall is usually filled with students and others. They observe the strictest silence and behave with great decorum. It is admitted that the hall in which the library is principally situated, though joined to several smaller rooms, one of which is made use of as the office of the chief librarian, is too small to accommodate the number of volumes already collected, together with those left to the establishment by M. BIDAULT DE VILLIERS, as well as the crowd of students who assemble there to make their respective researches. Hence it has been decided, within a few years, to appropriate for the use of the library, independently of the rooms it now occupies, those in which the museum is placed, as soon as the latter is translated into the apartments which are being prepared for it in the adjoining building. When this arrangement is effectuated, there will be sufficient space for displaying and classing in a desirable manner all the books; and it is to be hoped that suitable funds will be appropriated by the faculty, the university, or government, for the purpose of enlarging the collection, and of enriching it by the purchase of medical works in living foreign languages—a department in which it is very deficient. It is to be hoped also, that the learned societies in France will be forced to present their publications to this useful establishment, and that the professors of the

faculty, in order to set a good example, will no longer refuse, as they have but too often done, to enlarge the collection with copies of their own works. It remains to remark, in reference to the subject before us, that this establishment is confided to the care of a chief librarian and of one or two assistants. The former, Dr. MACMAHON, is the son of an Irish gentleman, but a Frenchman by birth. He speaks the English language very fluently, and is extremely well read in medicine. But these are not his only claims to our regard, for we could with difficulty point out an individual who combines in a higher degree all the qualities of the perfect gentleman. Dr. Macmahon's principal assistant is Dr. BAYLE, the author of several works of considerable merit. He is one of the *aggrégés* of the faculty, and a member of the board of editors of the *Revue Médicale*.

As regards the museum it will not be necessary to enter into many details, inasmuch as it is not in our power to say much in its favour. It occupies five rooms, one of which, situated in the covered gallery we have already alluded to, is very large. The preparations, which consist of specimens of healthy and morbid anatomy, instruments of surgery and natural philosophy, and objects of natural history, are arranged in the following order:—

The first or large hall contains all such preparations as are necessary for illustrating the composition and structure of the human body in every possible point of view—bones of all sizes and of all ages, healthy and diseased—injections of arteries, veins, and lymphatics—preparations of myology, splanchnology, and the nervous centres and cords, in health and disease—wax models of various parts of the body in health—specimens of comparative anatomy—monstrous foetuses—mummies, &c. In the second room is found a fine collection of surgical instruments, new and old. The third room contains a tolerably full collection of wax preparations, representing various pathological changes in the tissues and organs, and a few of healthy parts. They were made by PINSON, LAUMONIER, JULES CLOQUET, and DUPONT. In the same room are also found casts of the heads of the principal criminals executed within the precincts of the royal courts of Paris and Versailles; the skulls of several of these individuals are placed in the first room.

The fourth room contains a rich collection of articles of the *materia medica*. The number of these amounts to upwards of seven hundred, and the specimens are for the most part good. The fifth room contains the collection of instruments of natural philosophy used in the demonstrations of the professor of that branch. This cabinet, to which the public is not admitted, is said to be the best in Paris. On

the whole it may be said, that the anatomical museum of the faculty, though rich in many departments, is rather deficient in preparations of morbid parts, and is not arranged and kept with that degree of neatness and cleanliness so desirable in establishments of the kind. In both these respects it is vastly inferior to the Hunterian and other museums of London. It is open for the public on Mondays, Wednesdays, and Fridays, from 10 to 2 o'clock. On Tuesdays, Thursdays, and Saturdays, the pupils of the *Ecole Pratique*, as well as the candidates for the first and second examinations, are alone admitted from 10 to 1 o'clock.

Of the other establishments connected with the school of medicine, we shall speak in detail in some future communication; but to what has just been said relatively to the main edifice of the school, it will be proper to add, that in a contiguous building, the librarian, the dean, &c. have apartments, furnished to them free of expense by the faculty, and in which they reside.

From this digression we turn to the main object of the present article, commencing with the course of study, which the aspirant to the doctorate must go through. It is necessary to premise, that the following remarks apply equally well to all the medical faculties of France. In order to be entitled to a diploma, the candidate must furnish certificates, proving that he has complied, prior to his commencing the study of medicine, with certain prerequisites; for example, that he has obtained the degrees of bachelor of letters and of bachelor of sciences. To receive the former, he must have been examined, and have been found competent on, the following branches:—Greek literature, Latin eloquence, Latin poetry, French eloquence, French poetry, philosophy, history of philosophy, ancient and modern history, ancient and modern geography.

To obtain the second of these degrees—that of bachelor of sciences, the candidate must have answered in a satisfactory manner on mathematics, natural philosophy, chemistry, zoology, botany, and mineralogy. After obtaining those degrees, and presenting his certificate of birth, the written authorization of his father, or if he be a minor, of his tutor or guardian, to his engaging in the pursuits of the medical profession, a certificate of correct and moral behaviour; after presenting these, and furnishing a security, if his father or guardian do not reside in the place, any individual may present himself with a view of commencing the study of medicine, and is admitted to take his first inscription. These inscriptions consist in placing one's name on a register kept for that purpose, and receiving a certificate attesting the fact. This ceremony is gone through every three months; and in

order to be entitled to present himself as a candidate for the doctorate, the student must have received sixteen inscriptions: from which it follows, that the term required by law for the prosecution of professional studies, before the degree of doctor in medicine, or doctor in surgery is conferred, is four complete years; unless, however, these studies have been prosecuted in a secondary school. In such cases, the term required is six years, and it is in the same way obligatory upon the student, previously to have obtained the degrees already noticed—of bachelor of letters, and bachelor of sciences.

Inscriptions received in one medical faculty are of equal value in all the other faculties of the kingdom, provided, however, they are accompanied with a certificate of correct behaviour, from the dean of the faculty, or from the academical council, where they have been received. The first inscription can only be taken out at the commencement of the scholastic year. The royal council authorizes it sometimes to be taken out in the quarter, commencing in January, when satisfactory reasons for not doing otherwise have been alleged by the student; but under no pretext is he allowed to commence his studies in the third quarter. The inscriptions must be taken out in regular succession; unless the reasons assigned for not doing so, are held satisfactory by the faculty. A student who takes out an inscription for one of his comrades, loses all his own. The inscriptions received as aspirant to the title of officer of health, either in a primary or secondary school, are counted for the doctorate, provided the candidate presents, before the 13th, his diplomas of bachelor of sciences and bachelor of letters. But the diploma of officer of health is not admitted as a substitute for inscriptions in a faculty, if the studies required for obtaining said diploma have not been made in a primary or secondary school. The courses of lectures given by medical societies cannot supply the place, in order to obtain inscriptions, of those given by legally established schools. Military surgeons of the second and third classes, who have been employed in the armies, can avail themselves of their services for the purpose of dispensing with the inscriptions; or if they have attended the medical lectures delivered in the military and naval hospitals of instruction, (but in no other hospital,) each of these years of study are received as equivalent for one spent in attendance on a special school. If a young man, after taking out a certain number of inscriptions in a faculty, is called upon for his services in the army, he cannot, on his return, avail himself of the inscriptions allowed him gratuitously for those services, however numerous they may be, for any other purpose than to complete those he was in need of, prior

to his departure. Students residing in cities where faculties of medicine are established, cannot avail themselves of the studies they have made in hospitals, with private teachers, or even in the school, without having taken out the inscriptions corresponding to the period of those studies, unless they can prove, by means of certificates obtained from competent authorities, that it was impossible for them to comply with that regulation. Even under these circumstances, only four inscriptions are allowed them. Nevertheless, an exception is made in favour of those pupils who, though placed in this predicament, have gained premiums in the faculties.

In our last communication we stated, that the number of branches taught in the medical faculty of Paris amounted to sixteen. Unlike what occurs in the medical schools on this side of the Atlantic, and, we believe, in the English and Scotch Universities; but in conformity with the plan pursued in Italy and Germany, the student is not at liberty, in France, to choose himself, the lectures he is to attend in each year. A regular distribution of the courses, the number of these necessary for each student to attend, and the order in which they are to be attended during each session, is fixed by the faculty, and publicly announced at the commencement of the scholastic year. To ensure the observance of this arrangement, each pupil receives a card, by which he is enabled to gain admittance to the lectures he is required to attend. Yet, though this be the case, no student is actually forced to attend the lectures, and all that he is really required to do, is to take out his inscriptions at the regular periods, and to go through the examinations in a creditable manner. If he does that, he may abstain altogether from the lecture room, and seek his knowledge where he deems best. Some years ago an attempt was made to compel the class of each professor to attend him punctually, by calling over the roll not less than twice a month. But this plan was soon abandoned; for the students, unwilling to submit to it, and determined to prevent its being put into operation, answered in full chorus to each name that was called, coughed, sneezed, and scraped their feet, so as to cover the voice of the professor.

The duration of the scholastic year is fixed at a meeting of the faculty, held prior to the opening of the course. The faculty decides on the same occasion, on the days and hours at which the different professors will deliver their lectures. But whatever be the duration of the full session, the courses are divided into two sets—the winter and summer courses. The former commences usually in the early part of November; the latter in the beginning of April, and continues until the end of August. The following will afford an idea of the

distribution of the courses during the winter and summer sessions of the four years of the studies, drawn up by an *arrêté* of the royal council, in 1820.

FIRST YEAR.—*Winter*.—Anatomy, Physiology, Chemistry.—*Summer*.—Medical Natural Philosophy, or Hygiene, Surgical Pathology, Botany.

SECOND YEAR.—*Winter*.—Anatomy, Physiology, Operative Surgery.—*Summer*.—Medical Natural Philosophy, or Hygiene, Pharmacy, Surgical Pathology, Surgical Clinic.

THIRD YEAR.—*Winter*.—Materia Medica, Medical Clinic.—*Summer*.—Operative Surgery, Surgical Clinic, Medical Pathology.

FOURTH YEAR.—*Winter*.—Medical Clinic, History of Medicine.—*Summer*.—Surgical Pathology, Legal Medicine, Clinic at the Hospice de Perfectionnement, Midwifery.

Since the period at which this arrangement was made, some changes, occasioned by the organization of the school, have been effected in the distribution of the courses. The following list, showing the courses delivered in the winter and in the summer sessions, though not quite satisfactory, since it does not indicate the lectures that must be attended in each year by the student, is copied from the *Almanach Général de Médecine*, for 1830.

Winter Lectures.—1st, Anatomy; 2d, Physiology; 3d, Medical Chemistry; 4th, Surgical Pathology; 5th, Medical Pathology; 6th, Operative Surgery and Dressings; 7th, Surgical Clinic; 8th, Medical Clinic; 9th, Obstetric Clinic.

Summer Lectures.—1st, Medical Natural Philosophy; 2d, Hygiene; 3d, Medical Natural History; 4th, Midwifery; 5th, Surgical Pathology; 6th, Medical Pathology; 7th, Pharmacologia; 8th, Therapeutics; 9th, Medical Jurisprudence; 10th, Surgical Clinic; 11th, Medical Clinic; 12th, Obstetric Clinic.

From this it will be perceived that all the clinics, as well as medical and surgical pathology, are taught both in winter and summer. These double courses are not, however, obligatory in both seasons, but have been arranged in that way with a view to accommodate those students who feel disposed to attend them during summer instead of winter, and who have thereby more time to devote to anatomy and the other branches.

In old times three grades or titles were successively conferred on the candidate for the high honours of the profession; these grades were the baccalaureate, the license, and the doctorate. Each of them was conferred after a fixed period of studies, and after particular examinations and ceremonies; and before being raised to the doc-

torate, it was of indispensable necessity for every individual to have passed through the two first. These grades were not conferred by the same authorities; those of bachelor and licentiate in medicine being obtained from the chancellor of the university, and that of doctor from the faculty of the school where the individual had prosecuted his studies. In the progress of time, however, this arrangement was modified, and the faculties assumed the right of conferring all their honours; or more properly speaking, of recommending those candidates they thought entitled to either of the grades we have mentioned to the chancellor; for to him devolved the exclusive privilege, in all cases, of conferring degrees. When the downfall of all the establishments of public instruction was effected by the early revolutionary governments, the plan of which we have just spoken, was necessarily abandoned; for, as we shall have occasion to show in a more particular manner at some future period, all practitioners of medicine being placed on the same level, and neither knowledge nor graduation being any longer obligatory, the different grades in the profession became useless, and were of course no longer sought after. So soon, however, as some order had been reëstablished in the practice of medicine by the decrees of the convention, and the school had been reërganized, one grade, that of officer of health, was instituted, and it was only under the consular government of Napoleon, by the law of 10th March, 1803, that the doctorate, but the doctorate alone, was again conferred—the officers of health, created by the same law, being a different order of physicians. By the decree of 1808 relative to the formation of the University, the old plan of the three grades was revived in the five faculties of which that establishment was composed. These grades, or titles, were conferred exclusively by those faculties after public examinations and public acts. They did not confer the rank or title of member of the university, but were requisite before an individual could be entitled to that honour. Whether the plan was ever fairly put into execution or not, we have not the means of ascertaining; but we believe it may be confidently affirmed, that for many years past, perhaps ever since the restoration, only one grade, the doctorate, has been conferred. Such is the plan now pursued, though, as we shall see presently, this grade is obtained after several examinations, undergone at different, but fixed periods, in the course of the studies.

While on this subject we may be allowed to express the opinion, that the plan of conferring several degrees, at various periods of the studies, on those who aim at the high honours of the profession, was always found to be productive of the most advantageous conse-

quences; and it is impossible not to regret that it has been abandoned in France. By means of it the young man is brought frequently before the professors who are the most proper—the only judges of his capacity and acquirements. He is stimulated to study by the desire, not only of acquitting himself in a creditable manner in presence of his teachers, of the exercises required of him before he can obtain the desired degree, but also of possessing a diploma, and of being held in esteem by the mass of his fellow students. Had the plan been persevered in in France, these advantages could have been obtained without detriment to the profession, or to the sick in general; for the baccalaureate and license need not, under any circumstances, confer the privileges appertaining to the doctorate—that of practicing; and the student would have attached as much importance to the title—would have sought after it with as much ardour—would have felt as much mortified had he failed in obtaining it, as if it really conferred those privileges, particularly as he would have known that the honour to which, by obtaining it, he had been thus raised, was a stepping-stone to the highest in the profession. The inconveniences resulting from the abandonment of the plan in question, are, it is true, somewhat obviated by the multiplicity of examinations, and the period at which these are held. But a title and diploma go a great way with a young man, particularly in France, and the circumstance of passing through an examination will never excite much emulation unless success in that examination is to lead to some distinction.

Unlike what took place before the revolution, medical and surgical instruction is now obtained in the same school. There are two sets of doctors—those in medicine, and those in surgery. The studies required for these two varieties of the same grade are precisely the same, and the only difference in the mode of reception consists in some modifications in one or two of the examinations—the examiners being apprized, in due time, of the intention of the candidate to obtain the one or other of those degrees. But of this we shall speak more in detail presently.

We now pass to the subject of the examinations. Before presenting himself to these the pupil must of course have complied with every prerequisite for graduation, and must in particular present the diplomas of his degrees in letters and sciences. Nevertheless, officers of health, who have served in the capacity of military surgeons, as well as those who have taken out inscriptions in a secondary or in a military medical school prior to the 1st of January, 1823, are dispensed with presenting the diploma of bachelor of sciences. The degree of master of arts obtained in a foreign university, cannot supply the

place of that of bachelor of letters. Pupils who on the 1st of January, 1826, had more than one inscription, were allowed, until the 1st of January, 1827, the choice between two modes of examination. Agreeably to the old mode, the pupil who had taken out sixteen inscriptions was, at the expiration of the last quarter, allowed to offer himself as a candidate for the degree of doctor in medicine, on submitting to five examinations and defending a thesis. Anatomy and physiology constituted the subjects of the first examination: pathology and nosology of the second; materia medica, chemistry, and pharmacy of the third. At the fourth examination the candidate was tried on hygiene and medical jurisprudence; while the fifth examination was appropriated to the medical or surgical clinics, according as the candidate aspired to the degree of doctor of medicine or doctor of surgery.

Agreeably to the new mode, the subjects of the examinations are arranged in the following order:—

1st. *Examination three months after the eighth inscription.*—Medical Natural History, Medical Natural Philosophy, Medical Chemistry, and Pharmacologia.

2d. *Examination three months after the tenth inscription.*—Anatomy and Physiology.

3d. *Examination three months after the twelfth inscription.*—Medical and Surgical Pathology.

4th. *Examination three months after the fourteenth inscription.*—Hygiene. Legal Medicine, Materia Medica and Therapeutics.

5th. *Examination three months after the sixteenth inscription.*—Medical Clinic, Surgical Clinic, Midwifery.

Candidates who have undergone the examinations of the eighth, tenth, twelfth, fourteenth quarters, (trimestres,) are alone allowed to take out the tenth, twelfth, fourteenth, and sixteenth inscriptions.

From the 1st of November, 1829, every candidate without exception have been compelled to undergo their examinations agreeably to the preceding mode. These examinations are conducted by two professors and an agrégé. Each of them has an adjunct who supplies his place in case of his being absent. The examinations take place for four candidates at one time, their names being registered according to alphabetical order. They commence at one o'clock, and terminate at three; so that each candidate is examined during half an hour, or during ten minutes by each examiner. Whether the candidate be examined agreeably to the old or to the new mode, he is required to hand in, at the fifth examination, the details of six observations collected at the bed-side of the sick. Of these, four at least must have been collect-

ed in the clinics of the faculty, and their authenticity must be certified by the professor. Candidates for the degree of doctor in medicine present the histories of four cases of internal, and two of surgical diseases, while those who aspire to the degree of doctor in surgery, are required to furnish four of surgical, and two of internal diseases.

The candidates are classed, for their examinations, agreeably to the date of their inscriptions, and under no pretext is the name of the examiners communicated to them beforehand.

For the examination on anatomy and physiology, the candidate makes on the dead body an anatomical preparation previously designated to him. On a subsequent day he answers to several anatomical and physiological questions, having a bearing on the nature of the preparation he has made, and gives a demonstration on the skeleton of the different parts of osteology. At the examination on materia medica, chemistry, and pharmacy, the candidate answers demonstratively to the questions put to him on medicinal substances. The examination on internal and external pathology, (medical and surgical,) is conducted in Latin. It takes place at one sitting. The same holds in respect to the examination on hygiene and legal medicine, in which the candidate is required to write the formula of a report on a subject proposed at the moment.

At the examination on the clinics, questions proposed beforehand are drawn out by lots, (*tirées au sort.*) They have reference to fixed and well-known practical cases. To these questions the candidate must answer in Latin and in writing. With this view he repairs to the school, at least three hours prior to the examination, and there prepares his answer without the assistance of any one. In presence of the examiners he answers *viva voce*, in Latin, to all questions which his own written answer may elicit. When the candidate aspires to the degree of doctor of medicine, a greater number of medical than surgical questions are proposed to him at this examination. The reverse is the case when he wishes to obtain the degree of doctor of surgery. Under these circumstances he is moreover obliged to perform on the dead body all the operations required, in soft and hard parts, for the cure of the diseases which form the object of the examination.

It occasionally happens that a candidate is found incompetent on particular branches, and is required to attend to these for some time longer. In such case this extension of studies, and the examinations consequent upon it, must always, unless by special leave, take place in the same faculty.

When a candidate presents himself with the view of defend-

ing a thesis, after having undergone his examinations in another of the French faculties, the president and the examiners must be apprized of this circumstance.

After expressing, by inscribing his name on a register kept for the purpose, his intention of defending his thesis, the candidate deposits the manuscript at the office of the administration, and the dean designates a president who examines and signs it, and becomes responsible for the principles and opinions it contains, in relation to religion, public order, and morals. If he considers the thesis suitable for forming the subject of the sixth examination, the president makes a report to that effect. Should this not be the case, his decision is referred to the faculty. He superintends the printing, signs the proof sheets of the essay, which cannot be distributed unless he certifies that all the formalities have been complied with. Should a thesis, when distributed to the public, be found different from what it was in the manuscript submitted to the examination of the president, or should it have been printed before the manuscript had received the sanction and signature of the latter, it would, together with the sixth examination, if the latter had taken place, be annulled. The candidate would be refused his diploma, and obliged, before obtaining it, to defend a thesis on another subject, after a lapse of time fixed by the royal council; and that too, independently of other academic punishments that may be incurred in consequence of any objectionable principles contained in the printed thesis.

The title page of the thesis must express the object of the author; whether he aspires to the doctorate in medicine or in surgery. No unpublished medical observation can be inserted in a thesis without the written approbation of the physician who has attended the patient. The dedication of these essays, unless made to a parent, must be authorized by the person to whom it is addressed. In such cases also, the approbation of the faculty must be obtained. The candidate deposits a considerable number, (140,) of copies of his thesis, which are distributed as follows:—

To the University, 2—Rector, 1—General Inspectors, 2—Royal Academy of Medicine, 1—Faculties of Montpellier and Strasburgh, 2—Royal Library, 1—First Physician of the King, 1—Professors, 24—Aggrégés, 36—Argumentation, 6—Library of the School, 5—Treasurer, 1—Librarian, 1—Conservators of the Cabinets, 1—Chief of the Anatomical Works, 1—Chief of the Chemical Laboratory, 1—Assistant Librarian, 1—Assistant to the Conservator of the Cabinet, 1—Dissectors and Aids of Anatomy, 6—Chief of Clinics, 3—

Aid to the chemical department, 1—Aid to the botanical department, 1—Bureau, 5—Dresser, 1—Collection in Reserve, 35.

The same individual is engaged for the printing of all the theses; the form of these, the number of lines in each page, and the quality of the paper, are designated by the faculty, in order to ensure regularity in the execution of the rules just mentioned, and similarity in all the theses.

The thesis is defended before the president of the board, several of the professors, and two *aggrégés*. The act continues an hour. The president has no vote in the decision of the jury of examination, but may nevertheless take part in the deliberation. In case of an equal division of votes relative to the propriety of admitting the candidate, the opinion of those in his favour is adopted. Every certificate of capacity delivered by a faculty, must, before being converted into a diploma by the royal council, be approved by the rector, (whose office is filled at Paris by the dean,) and the certificate of approbation refers as much to the moral conduct as to the capacity of the candidate. The rector has consequently the right of refusing a diploma to one who does not merit it. The diploma is given by the grand master, who may suspend the delivery of it, referring this act to the council of state. He may also compel the candidate to go through his examinations a second time.

Doctors in medicine who wish to obtain the title of doctor in surgery, and vice versa, are required to sustain a fifth examination, and defend a thesis on a surgical or medical subject, according to the nature of the degree they wish to obtain. They are at the same time obliged to pay one hundred francs for the fifth examination, one hundred and twenty francs for the sixth, or thesis, and one hundred francs for the seal of the university, making a total of three hundred and twenty francs. But a doctor in medicine is not allowed to present himself to the fifth examination for the doctorate in surgery, before having defended his thesis in medicine, and the examiners must be apprized of his intention, of obtaining the one or other of these degrees, in their letter of convocation.

French physicians or surgeons who have graduated in foreign universities, or military officers of health, could formerly obtain with ease an exemption from the first four examinations. But since the 1st of January, 1815, this exemption is no longer allowed, except by means of a special *ordonnance*. By a decision of the faculty of Paris, dated 28th of February, 1822, studies made in foreign countries have been assimilated to those made in the secondary schools of France, provided, however, they have been made in well known Uni-

versities, or in places where it is ascertained, that a complete course of medical instruction can be obtained. Nevertheless, physicians who have graduated out of France, occasionally obtain the above exemption, and even one from the fifth examination. In that case they are merely required to defend a thesis, and to pay two hundred and twenty francs—one hundred and twenty for the examination and one hundred for the seal. They may also obtain the two titles of doctor of medicine and doctor of surgery, by defending two theses and paying four hundred and forty francs.

Pupils who have given proofs of capacity in the old schools, agreeably to the established rules, and who wish to exchange their certificates of provisional reception for a diploma, are obliged to declare whether they wish that of doctor in medicine or doctor in surgery. They may then obtain it by paying five hundred francs.

No one we presume will refuse to admit that the preceding regulations are wise and just; yet we cannot help thinking, that the professors at Paris have shown rather too exalted an opinion of their worth, by assimilating studies made in foreign countries to those made in the secondary schools of France. Were this compliment levelled at our schools, or even at the English and Scotch schools, it would not be a matter of astonishment, because the quantum of instruction that may be derived in them is exceedingly limited when compared with that afforded in France. But it cannot prove very agreeable to the schools of Austria and Italy, where the course of studies required for graduation, and placed within the reach of students, is, to say the least of it, as complete as at Paris itself.

In terminating this account of the requisites for graduation, and of the regulations of the schools of Paris, it remains to state, 1st, that every mark of disrespect towards the dean or any of the professors, is punished by the loss, on the part of the offender, of one or two inscriptions, or more severely if deemed necessary, and that, should the offence be repeated, it is punished by exclusion from the school during at least six months, or at most two years. 2d. That it is expressly forbidden to the students of a faculty, or of the various faculties of the same or of different orders, to form associations, without having obtained permission to that effect from the authorities of the place, and apprised the rector of the circumstance. 3d. That students are also prohibited from acting or writing collectively, as if forming a legally constituted corporation or association. 4th. That every student who is convicted of taking part, under any pretext whatsoever, in illegal assemblies, in revolts, fights, &c. is erased from the register of the faculty; his ticket of admission is at the same time withdrawn from him,

and he is prohibited from attending the lectures. 5th. That the price of medical education in France amounts to one thousand francs, independently of the expenses of publication of the thesis. Of this sum, thirty francs are paid for each examination, except the sixth, (that of thesis,) for which is paid sixty-five francs. The rest, or seven hundred and eighty-five francs, serve to defray the expenses of the sixteen inscriptions, for the first fifteen of which are paid fifty francs each, and for the sixteenth thirty-five francs. Besides these sums, one hundred francs are charged for the seal of the diploma, and three francs for the use of the gown worn at the time of examinations, &c.

Although the student may have paid for inscriptions at one of the secondary schools, he is obliged, if he wishes a diploma from one of the faculties, to pay the same sum demanded of other students who have not obtained such inscriptions.

We have thus presented in as small a compass as possible, an outline of the plan of medical instruction pursued in the three faculties of France, of the prerequisites for obtaining the title and rank of doctor of medicine and surgery, as well as the principal rules adopted for the proper government of the school. It will immediately be perceived, that many of the latter are of local interest, and only applicable to the state of society, to the character of the youths, and the nature of the government of France. Notwithstanding this, however, we do not know that some of them might not be adopted with advantage elsewhere, and even in this country. But, without insisting on the subject, we may be allowed to express the opinion, that the plan of instruction at present in operation in France, so far as regards the diversity of branches taught, the division of the studies in each year and each section of the full course, the number of the examinations, &c. is entitled to much commendation. We are not prepared at present to inquire whether some improvements might not be made in that plan—whether some branches of minor value are not taught, while others of greater importance are not attended to; for the necessity of reform is generally admitted, and occupies still the attention of the government and of the profession at large. Yet such as it is, the plan in question is so far superior to that in force in our schools—the effects of this superiority are so evident to every one who has been able to make the comparison between the graduates of both countries, and who is not biassed by prejudice, that were we called upon for advice by a young man about commencing the study of medicine, and were we able to select the place where he was to prosecute his studies, we would unhesitatingly give the preference to the schools of France over those of our own or of other countries, Germany excepted. We sincerely hope that the eyes of

our countrymen will, before many years have elapsed, be open on this important matter, and that the necessary reforms will be made in the plan of instruction actually in force among us. In making these remarks, it is far from our wish to disparage the merit, the learning, and the practical skill of American physicians. Indeed we are ourselves too much interested on this subject, to harbour such an intention. But let them be candid, and say whether the greater part of the knowledge, theoretical and more particularly practical, which the most distinguished among them possess, has not been acquired since they graduated, and often at the expense of human life? Whether they are not now sensible of the imperfection of their medical education? With industry on the part of the young physician, the effects of this deficiency may be, and has fortunately been, often remedied. But we are all aware that this industry is unfortunately seldom the lot of graduates, and painful as the confession may be, we are forced to admit, that the majority of our young physicians, after they have received the honours of the doctorate, do not study at all, or do so only in a desultory manner;—that they consequently remain very deficient in point of information, and hence very inferior to the graduates of the schools of the European continent.

As may have been perceived, medical education is only apparently cheap in France; for although lectures are delivered gratuitously, and the other expenses incident on the studies, as for dissection, &c. are but trifling, yet the inscriptions are expensive, and the amount paid for these, joined to the fees for examination and graduation, makes up a sum equal, or nearly so, to that which a medical diploma costs in this country. It is true that the sum, if divided by four—the number of years required for the studies, would make only about three hundred francs a year, (sixty dollars,) whereas the amount paid here for admission to the lectures, the expense of graduation, of dissection, of private instruction, without which a student can hardly get along with credit to himself, if divided by two—the number of years of attendance at the school required, would show a much larger annual disbursement. It is true also, that the expenses of living are much less in France, particularly at Montpellier and Strasburgh, than in our large cities. Yet, notwithstanding all this, as the difference of living four years instead of two, is to be taken into account, as the sum annually spent by the student there for his instruction and living, goes a great deal further than a much larger one with us; and as the whole amount is, therefore, (due regard being paid to this cause,) truly considerable, we are justifiable in saying, that medical education is only apparently cheap in France.

This dearness of medical education in France, joined to the impossibility of practising medicine or surgery lawfully without a diploma, and of getting admittance to the lectures without a ticket delivered only to regular students or to graduates, ensures in general, (for some improper subjects will creep in every where,) a bar against the admission in the profession, of individuals who are not of respectable parentage, and who are not likely to become useful to the community and an honour to the profession. Add to this, that in order to be entitled to take out an inscription, it is necessary, as we have seen, that the student should be a graduate in two other faculties. This of course cannot be done without some expense, and further ensures in a powerful manner, the effects to which we have already adverted. Nothing in our opinion is more injurious than *cheap* medical schools, allowing, as they do, particularly when unrestrained by the necessity of classical education and long periods of study, many chances to the introduction into the profession of individuals, who ought from their standing in society and deficient education, to be excluded from the honours of the doctorate. Those who contributed in framing the plan of studies adopted in France, were probably aware of these circumstances. Had they not fixed a high price on instruction, or rather on graduation, had they not required of the candidate degrees in other faculties, many would probably have been induced to study medicine—many would have obtained a diploma, and with it have been entitled to practice, who were fitter to cultivate the land or work at some trade. By adopting their present system, on the contrary, they have in a great measure secured admission to those only whose pecuniary means have enabled them to receive a good education, by which the faculties of the mind are early exercised and strengthened, and will not only prevent them from starving in the early part of their professional career, but also enable them to avoid the company of low and illiterate people, to mix with the more polished classes of society, and to govern themselves in their intercourse with the public generally, and with their fellow practitioners in particular, in accordance with the principles of sound morality and the feelings of amity and cordiality which are so strongly implanted in the bosom of every well-bred gentleman. Although we are willing to acknowledge that few men attain to eminence in the medical or in any other profession who have not their fortunes to make, we cannot help regarding pauper doctors—physicians belonging to the poorer and lower classes of the community, as a great nuisance, not only to the profession, but to the public at large; because, in consequence of their deficient education, they rarely acquire a sufficiently high standing, to obtain for them the advantages derived from professional intercourse

with their more polished and better instructed brethren, and because a man who on entering business is destitute of the means of support, or moves among the lower classes, is but too often induced, sometimes from sheer necessity and against his own inclination, at others, because he is undeterred by a sentiment of honour and a sense of the dignity of his calling, to make a trade of his profession—to endeavour to gain business by making low charges—to play the quack—and to caress and humour the whims of the public, in order to creep into notice. In our country we unfortunately see too many of these, not altogether on account of the cheapness of medical diplomas, for in some schools these are expensive; but owing to the facility of graduation in them all, though principally to the liberty which every one enjoys, in some states, of practising medicine without having received a license, to that effect, from competent authorities;—circumstances which induce many to tender their services as practitioners of medicine, though deprived of the desirable degree of preliminary education, and sometimes without any medical or surgical instruction. Of these, one out of a hundred may, by dint of industry, emerge through the crowd of nullities by whom he is surrounded, and acquire a merited reputation for learning and practical skill; he may also, by virtue of an innate sentiment of honour, correctness of deportment, and delicacy of feeling, gain the esteem and countenance of his brethren and of the respectable portion of the community; but the mass of such physicians will continue to grope in the dark, will never conduce to the improvement of their profession, but will become mere routine practitioners, and exercise their art, to the great detriment of the public and to the discredit of the profession.

We now pass to the subject of the professors of the medical faculties of France, and of the manner in which they are selected. Previous to the first revolution, there was, we believe, but one order of professors in the various medical schools of the kingdom. These professors were appointed after a concours or public trial, by the king, on the presentation of the judges, who consisted of the chancellor, when there was one, (as at Montpellier, where the school of medicine was held, though improperly, in the light of an university,) of the dean, and of a number of the professors. The chancellor, who was the chief of the school, was appointed directly by the king, without the formality of a presentation. In those faculties, where there were no chancellor, the duties of chief devolved on the dean, who was selected in the same way.

When, in 1794, the schools of Paris, Montpellier, and Strasburgh, which, like all the other establishments of the kind, had been abolished a few years before, were reorganized, a professor and an adjunct were

attached to each chair. In the progress of time, however, these adjuncts became assimilated to the titular professors. From this, it followed, that the number of these was doubled; and that, as the number of chairs was not increased, except at Paris, where a professorship of medical bibliography was created, there were, in fact, two professors for each chair. By the same law, (4th Dec. 1794,) the professors were directed to be appointed by the committee of public instruction, on the presentation of the commission of public instruction. By the general law on that subject, dated 11 Floreal, an x, (10th May, 1802,) it was directed that the professors should be nominated by government, from among three candidates; the first of whom was presented by one of the classes of the Institute, the second by the general inspectors of the studies, and the third by the professors of the school. This arrangement continued in force until the period of the organization of the university by Napoleon, on the 17th of March, 1808. By the decree of that date, it was ordered that, at the first formation of that gigantic establishment, the grand master should nominate to all the chairs in each of the faculties; but that at subsequent periods all vacancies occurring in them, should be filled by individuals selected after a public concours.

Shortly before the return of Napoleon from Elba, on the 17th of February, 1815, a royal ordonnance, based on the report of a commission appointed by government to inquire into the state of the instruction imparted in the medical schools of France, and to suggest the modifications required in those establishments, appeared in the *Moniteur* and *Bulletin des Loix*, by which the concours was abolished in the faculty of medicine of Paris. By this same ordonnance, it was ordered, that the professors should henceforward be selected from among four candidates, two of whom were presented for that purpose by the faculty, the other two by the academical council. But this arbitrary change was not effected without eliciting an expression of disapprobation on the part of the entire faculties of Montpellier and Strasburgh, which, in conjunction with the dean of the faculty of law, and several individual professors attached to the medical faculty of Paris, defended courageously the mode by concours. On the 30th of March of the same year, this ordonnance was annulled by an imperial decree, and the university was reëstablished on the same footing as prior to the restoration of the Bourbons. But this decree in its turn, was repealed, and the ordonnance of 17th of February, 1815, was reinforced in what relates to the subjects in question, by a royal decision, dated February, 1816.

By the ordonnances of November, 1822, and February, 1823, which effected the dissolution of the old faculty, and the reorganization

tion of the school of Paris; and by subsequent ordonnances, which occasioned similar changes in the schools of Montpellier and Strasburgh, a new arrangement was made in the board of teachers attached to these establishments, and in the mode of nominating them. This arrangement consisted in appointing two sets of teachers—professors properly so called, and *aggrégés*, or adjuncts.

The mode of election by *concours* was rejected for the former; but admitted for the latter. This occasioned at the time, and for a long period after, much discontent among the members of the profession, and the medical journals were clamorous in their demands for the reëdoption of the *concours* for the selection of the professors themselves.

While on this subject, we may be allowed to express the opinion, that the method of choosing a professor by *concours*, presents many advantages over the other, or that by presentation, but is not itself free from disadvantages. An individual, who is aware that he is to appear before a large and enlightened assembly, and that he must there answer to all questions put to him by judges appointed for that purpose; that this severe trial is to be repeated several times, and in various ways; and that the subjects on which he is to be examined are diversified in their nature; that independently of his examiners, a large concourse of individuals will judge of his capacity; such an individual, we say, will take very good care not to present himself, unless well qualified on all the branches on which he is to be examined. This proves a source of emulation to all those who aspire to the honour of the office to be filled, and the persons who make the final selection of the professor, are certain of choosing among men who are qualified, and have given public proofs of their capacity and learning. Add to this, that a bar is put to every thing like favouritism; since the government, if it retains the power of the final decision, can only chose among the most distinguished of the candidates, and must, unless it tramples on every principle of justice, be guided in its selection by the opinion of the judges. The method of selecting on simple presentation offers none of these advantages, inasmuch as the candidates may often have given no public proof of capacity, and the choice may be made merely to gratify private feelings, or reward private services, and not in consequence of a decided superiority on the part of the successful candidate.

Indeed, we shall not be easily induced to believe with Dr. JOHNSTON, that the voice of the public, and the wish of supporting character, will act sufficiently in preventing this abuse, (nomination of unqualified persons by interest and favour,) from being carried too far; “and that it is to be supposed that, in general, the council of instruction is too

enlightened, and too anxious to obtain the good opinion of the country, to allow, in many cases, power to triumph over merit." The appointments in 1823, of seven or eight professors, totally unqualified for fulfilling the duties of the responsible offices to which they were thus raised, is a sufficient proof of the disadvantage of the method by simple presentation. Nor is it to be supposed that such an occurrence, though happening at the time of the reorganization of the school, was not to be apprehended afterwards; for no effectual bar to a repetition of it was established, and there is little doubt that had the plan then adopted, continued in operation, the selection of improper individuals would have frequently happened—a circumstance which could not have resulted from the mode of selecting after a public concours.

Even in admitting that such effects were not to be feared from the method by presentation, and that those entrusted with the duty of presenting candidates, might always have been guided by principles of justice, it may be doubted whether they could always have had it in their power to discover among numerous competitors, such individuals as possessed all the qualifications requisite in a professor, or that they themselves would have been competent to decide on candidates to teach branches totally different in their nature from those entrusted to them. How, for example, could a professor of midwifery decide on the qualifications of a chemist, of a botanist, &c.?

The concours is certainly more efficacious than this method, because every candidate gives a public specimen of his qualifications, of his learning, eloquence, talents in imparting his knowledge, &c. and because a narrow field is offered for the operation of intrigue, coteries, personal antipathies, and partialities. "Il a l'avantage de mettre au jour des talens qui peut-être seraient demeurés inconnus; il fait distinguer surtout les qualités les plus nécessaires à un professeur; la netteté dans l'exposition, cette chaleur d'élocution qui s'empare des étudiants, qui les attache à la science." The concours is, for the same reasons, superior to the mode of nomination by the directors, or trustees of a school; for these are not generally members of the profession, and cannot, therefore, judge of the qualifications of individuals destined to teach one of the branches of that profession. They must rely on the opinion of the public, and we know that the public pronounce individuals to be great physicians, who are possessed of the slenderest talents and acquirements, and who would, therefore, make but poor professors: or they must rely on the opinion of the members of the faculty, or of physicians generally. But in the first case, the disadvantages and difficulties to which we have alluded when speaking of the mode by presentation, would inevitably result—in the second, men too advanced in age would be regarded as the fittest; for

few physicians would feel sufficiently free from jealousy and antipathy to recommend for so high a station, individuals younger than themselves, or even of their own standing—there being, in general, a disposition in the elderly members of the profession to look down with a sort of contempt on their younger brethren, without appearing to be aware of the fact, that all improvements in the science have been effected by physicians in the prime of life, and that the best professors are to be sought among the enthusiastic, zealous, active—in other words, never among the old.

But as we have said, the mode of electing by concours is not free from some disadvantages; the principal of which is, that individuals of slender talents, but who possess considerable firmness and composure, and a ready mode of answering questions—in a word, who are endowed by nature with a good share of impudence, will often show to much greater advantage in a public examination, than persons of ten times more talents, but who are timid and diffident of their own powers. Another disadvantage results from the natural unwillingness of persons who have already secured some reputation and fame, by their writings or intercourse with society, to enter into competition with younger, less learned, but more active and ready individuals, and thereby run the risk of losing both. Some disadvantage may also arise from the partiality of judges; but it is easy to guard against this by rendering the concours public, and composing the jury, which ought to be in part selected by the candidates themselves, not only of professors of the faculties, but of a certain number of physicians not attached to the latter. On the whole, however, neither this disadvantage, nor the others to which we have alluded, can be compared with those presented by the other methods.

But we return from this digression. If after the reorganization of the schools, the advantages of the concours were not enjoyed, the disadvantages of the mode by presentation, were in some measure obviated by the fact, that after the first nominations, in virtue of which so many unqualified individuals got admittance into the school of Paris, professors were chosen only from among the *aggrégés*, who, as we have seen, were appointed after a public concours.

Such being the case in regard to these *aggrégés*, and the organization of this body of subordinate professors being rather complicated, and without a parallel in any school with which we are acquainted, we shall doubtless be excused for dwelling a few moments on the subject. After doing this, we shall present an outline of the changes that have been effected in the mode of selecting professors since the

revolution of July, 1830, and terminate with some remarks on the body of professors, their pay, and the duties assigned to them.

At the period of the formation of the new school, at Paris, in 1823, twenty-four *aggrégés* were appointed by government. But the full number of these attached to the school amounted to thirty-six; the twelve additional ones, whose duties were to commence three years after, being directed by the ordonnance of the 2d of February, 1823, to be elected by *concours*, before the completion of the first scholastic year. In virtue of this decision they were chosen on the 19th of November, 1823, and definitively nominated in July of the next year. Those first appointed were divided into three sections, each section being subdivided, as we shall see presently, into several series. The whole body was divided into three classes: 1st. The *stagiaires*, comprising those lately elected, who during three years were not called upon to perform any duty. 2d. *Aggrégés en exercice*, or those who performed duty, or were liable to be called upon for that purpose—to supply the place of a professor—take part in the examinations, &c. Their period of duty extended to six years—one-half of their number being renewed every three years. The third class comprised an unlimited number of *aggrégés*—all those who had become *free*, after passing through the two first grades, denominated in French *le stage* and *l'exercice*. At the period of the first formation of the school, the twenty-four *aggrégés* who were then appointed were directed to enter forthwith on duty, *en exercice*, and it was directed that one-half of their number, whose names would be drawn by lot, should be renewed at the expiration of three years. It was further ordered, that the subsequent renewals should be effected in such a way, that at each of them twelve new *aggrégés* would be elected and enter the *stage*, twelve would be ready to perform duty, *passeraient en exercice*, and twelve would become *free*. The *aggrégés* of the three classes had equal and the exclusive right of becoming candidates for any vacant chair in the faculty. The *aggrégés en exercice* were divided into three sections—1st, medicine; 2d, surgery; 3d, accessory sciences. The first of these comprehended ten—namely, two for pathology, one for hygiene, one for therapeutics, four for the clinics, one for legal medicine, and one without any special branch. The section of surgery was composed of eight *aggrégés*—pathology two, operations and dressings one, clinics three, midwifery one, midwifery clinic one. The section of the accessory sciences consisted of six—of whom one was attached to anatomy, one to physiology, one to medical natural philosophy, one to chemistry, one to medical natural history, and one to pharmacologia. It results, therefore, that

every three years, five *aggrégés* for the first section, four for the second, and three for the third were elected, unless some promotion to a professor's chair took place from among the *aggrégés en exercice*, in which case the vacancy thus occasioned was filled by the election of an additional *aggrégé*.

The *aggrégés* were alone allowed to deliver private lectures. This privilege was enjoyed by the three classes, the *stagiaires*, those *en exercice*, and the *free*; and no authority could deprive them of it, except by virtue of a decision of the council of the university. We have said that after the first formation of the school, the situation of *aggrégé* could only be obtained after a concours; to this it is necessary to add, that the grand master of the university still retained the power of giving, with the approbation of the faculty, of the council of the academy, and of the royal council, the title of free *aggrégé* to doctors in medicine or surgery, who had attained the fortieth year of their age, and who had distinguished themselves by their writings or by their success in the profession. The number of those could not, however, exceed ten, and they only enjoyed the privilege of becoming candidates for the chairs of clinic. The *aggrégés* received no regular salary, but were paid whenever called upon to perform duty in the school. Those who were required to lecture for a professor, obtained from the latter a sum equivalent to one-half the regular salary received by him, during the time they performed duty; as well as half of examination fees, &c.

The following is an account of the regulations of the concours. Three months before the opening of the latter, which was announced in the public prints, the aspirant, who was required to be a Frenchman by birth, and to have attained the twenty-fifth year of his age, caused his name to be inscribed at the bureau of the faculty, depositing there at the same time, 1st, his diploma of doctor in medicine or surgery; 2d, his certificate of birth; 3d, a certificate of good conduct and good morals, signed by the mayor and confirmed by the prefect of the department; 4th, a certificate signed by three doctors and countersigned by the rector, attesting that he had not been instrumental in circulating addresses on the public roads, &c. and had not sold secret remedies.

A few candidates, (not more than three for each concours,) were dispensed, by the grand master with the advice of the faculty in which the concours was held, or of that in which they had obtained their degrees, with being of the age required. Two months before the opening of the concours, the list of candidates was temporarily closed at a meeting of the faculty, and forwarded to the grand master of the university. The royal council, after investigating the claims of each

candidate, closed the list definitively and forwarded it to the dean, who two weeks before the commencement of the examinations, gave notice to the candidates of their being admitted to take part in these. The board of examiners was composed of at least seven members and a president, who had the casting vote in case of an equal division. They were all named by the minister of public instruction. Some of the judges could be chosen from among physicians not attached to the faculty; but there was always required to be a majority of professors. Three judges were appointed to supply the place of the others in case of absence from sickness or other causes. Five judges, independently of the president, could pronounce in regard to the merits of an *aggrégé*, and to his claim to election, or the reverse. The names of the candidates were called over on the day and at the hour fixed upon for the *concours*; those who were absent at that time being excluded from the examinations. The candidates could reject any of the judges, but were obliged at the same time to state their reasons for doing so; the remainder of the judges being authorized in pronouncing whether or not the reasons assigned were of sufficient weight to justify the rejection. In case the decision of the board was unfavourable to the candidate, he could still appeal to the royal council. Two relatives of the candidate, uncles, brothers, or first cousins, could not sit as judges or supplementaries at the same *concours*. The rank among the candidates was determined by the priority of their admission to the honours of the doctorate.

The *concours* was divided into three parts. 1st. Medicine. 2d. Surgery. 3d. Accessory sciences. The principal exercises had reference to these three objects, and the candidates were accordingly divided into three series. When the interest of the school required it, the royal council, at the request of the faculty, established special exercises for each of the accessory sciences.

Each part of the *concours* was composed of three exercises. 1st. A written composition. 2d. An oral lesson. 3d. A thesis.

Of the written composition.—Three questions prepared by the judges were thrown into an urn, from which the oldest candidate drew out the one to be proposed. This being done, all the candidates were shut up in a room, under the superintendence of two of the judges, and were there required to compose a dissertation in Latin on the subject stated in the question proposed. After a period of from five to eight hours, during which they were not allowed to communicate with any one, or consult any books, they deposited their compositions, to which they previously affixed their signature, into a box, which the president sealed up. This first exercise was not public. Those

that followed took place in the lecture room and in presence of all who were willing to attend.

Of the Oral lesson.—The judges designated as many subjects as there were candidates. Each of these drew one of the subjects, and prepared upon it a lecture of three-quarters of an hour in duration, and for the composition of which he was allowed three full days. During the lecture only simple notes could be made use of. Several of these lectures occupied the attention of the judges during each sitting, which lasted three hours. After this exercise of the oral lesson, the written compositions were read out by their respective authors.

Of the thesis.—The judges designated as many subjects as there were candidates; each of whom drew one on which he was obliged to compose, and print at his own expense, a thesis in Latin. Of this thesis, ten copies were sent to the grand master, and one to each of the judges and candidates three days prior to its defence. This took place only after an interval of twelve days from the moment the subjects were distributed. The argumentation was conducted in Latin among the candidates. The three hours which this exercise occupied were divided in such a way, that each candidate discussed the subject during at least half an hour, and never more than one hour. If the candidates were numerous, only six were allowed at one time to take part in the discussion. If, on the contrary, there was not a sufficient number of them to occupy the three hours, the president designated some of the judges, or the dean, to argue with the candidates. When the argumentation took place among the latter, it always commenced with the one who was to defend his thesis immediately after. In this argumentation the disputants could attack the principles developed in the thesis—the solutions which the author had offered to the questions proposed. They could likewise propose other questions on the subject of the thesis, and combat the answers given by the defendant.

Within twenty-four hours subsequent to the last sitting of the concours, the judges assembled, and elected, by a secret ballot, and by a majority of the whole, those they considered entitled to preference. The minutes of the operations of the concours, after being signed by all the judges, were forwarded to the grand master. The nominations might be impugned by the unsuccessful candidates, but only on the ground of a violation of the prescribed forms. These appeals were addressed to the grand master, judged by the royal council, and could not be received after the tenth day following the termination of the concours; one day more being allowed for every twenty leagues, (ten myriametres,) from the place where the faculty was situated.

The final nomination of the candidate did not take place before the expiration of this term, or the rejection of the appeals, (*réclamations*.) Whenever the nomination was annulled, the concours was gone over once more, but only among the same candidates.

It is from among the *aggrégés*, and from them alone, that the professors were selected by the grand master—the choice being made out of six candidates, three of whom were presented by the assembly of the faculty, and three by the academic council. In these presentations the professors and *aggrégés* of the other medical faculties of the kingdom might be included.

It has already been remarked, that the disadvantages of the method of appointing professors on *presentation* was somewhat obviated by selecting them only from among the *aggrégés*, who were obliged before obtaining this situation to pass through the ordeal of a concours. These disadvantages were not all obviated, however, for as only very young men, who are as ill-suited as old men to undertake the responsible office of public teachers, were likely to feel disposed to submit to these public trials, the selection of professors would almost invariably have been made from among the junior members of the profession unless vacancies had not occurred soon in the faculties, and the *aggrégés* had thereby had time to advance in age. The other alternative would have been in case of a vacancy in a chair of clinic, to select one of the *aggrégés* who had been elected without the formality of the concours, by virtue of the right vested to that effect in the grand master of the university. But in that case the advantages of the concours would have been annulled; for if some individual could be appointed to a professorship without undergoing the trials of a public concours, where was the necessity of requiring these trials of others? But as every three years an addition was made to the number of these subordinate professors, there would always have been a large number of young candidates for every vacancy that occurred in the faculties, and intrigue, influential protection, and a thousand other causes, might have induced the faculty in which such vacancy occurred, as well as the academic council, to present, and the government to select one of them in preference to an older, and more experienced, and more worthy competitor. It might also have happened, and did actually happen, on several occasions, as in the appointment of M. CRUVEILHIER, to supply the vacancy occasioned by the death of BECLARD, and of M. MOREAU as successor of DESORMEAUX, that with a view to please the government, the faculty or the academic council would place at the head of the list of presentation an individual agreeable to the former, and thus give an apparent sauc-

tion to the preference of him over more deserving candidates. This circumstance was particularly to be feared at an early period after the reorganization of the schools; since the majority of the members of the faculties were mere tools in the hands of government, and the greater number of *aggrégés* had been appointed directly by the latter, and were, with some exceptions, less distinguished for talents than for subserviency to the ruling power and to the priesthood. /

Physicians who had attained a certain degree of eminence as practitioners, who had acquired considerable reputation by their writings, or as lecturers, could not feel disposed to enter in competition with young men at a minor concours, who, nevertheless, might have made excellent professors, and would willingly have gone through all the exercises of a concours opened for the purpose of supplying a vacancy in a faculty, and particularly if they had had to compete with men of equal standing with themselves. Indeed, the establishment of the *aggrégés*, with the privileges accorded to them, at the same time that it was unjust, led to great disadvantages, for it not only prevented the physicians to whom we here allude from delivering private courses of lectures—from acquiring the habit of teaching as well as obtaining renown and profit—and from being useful to students; but prevented them from ever becoming candidates to a chair in the faculties; while it accorded these privileges, at the first formation of the schools, to some individuals unknown as writers, lecturers, or even as practitioners. The monopoly, therefore, remained for some time, agreeably to the plan adopted, in the hands of a few who in the commencement had all been appointed by government; and the nominations to vacant chairs was sure to be made from among these, until no more of them remained to be promoted. On the whole then, we believe that the old plan of electing professors themselves by concours is the best that can be devised—far preferable to the one adopted in 1815, and even to the one substituted in 1823.

From the preceding account of the manner of conducting the concours—of the different exercises to which the candidates were obliged to submit, it will be perceived that it was not the easiest thing in the world to become an *aggrégé*—that it required much preparation, and was well calculated to excite emulation. The consequence of this was, that the greater number of these *aggrégés* were men of talents and information, and would one day have become competent to the task of assuming, with credit to themselves, and advantage to the school, the duties of a professorship. The exceptions to this were found principally among those who at the period of the organization of the schools were appointed without a *concours*, and had

obtained the situation through means of protection and intrigue. The result in question would have been greatly enhanced by the training they underwent during the period of the *exercice*. Nothing can we believe point out more forcibly the excellence of the plan and method of instruction pursued in the schools of France, than the fact that young men recently from the benches of the lecture rooms can place themselves on the list of candidates, and go through the whole of the exercises with considerable *aplomb*, and often with success. We fear that a similar result would not often be obtained in our medical schools, from which young graduates issue with a comparatively small stock of theoretical, and generally without the least practical knowledge. Clever as many of the members of the profession in America become as practitioners after a few years attendance on the sick, we are inclined to think that few among them would acquit themselves with honour of the arduous duties to which the *aggrégés* of France were subjected. The medical education obtained in this country is too superficial, and in general our habits of study are too desultory, to allow us to look forwards for any other results. We cannot help thinking that our schools, and even the science of medicine among us, would be much improved were a number of *aggrégés* or adjuncts to be appointed, and were the selection of professors to be made from among them. So far we have nothing of the sort, and if we mistake not, the few adjunct professorships in our schools give no additional claim to the chair when the latter becomes vacant. But as things now stand the arrangement is perhaps the most proper, as these situations are obtained, not after public trials, but through protection and favouritism. Some private associations of lecturers in our country are viewed by many as the legitimate nursery of professors. But we confidently hope, that those who have charge of nominations will never regard the subject in this light. It would be encouraging monopoly, since the vacancies occurring in these institutions are filled, not after a *concours*, where all physicians would be admitted as candidates, but by a simple appointment made by the existing members. The whole power is placed in the hands of a few individuals who are likely to be guided in the choice of their future colleague, more by friendly feelings and interest, than by the consideration of talents. Whenever the chance of admission is not equal for all, the pretensions of these institutions, of being the source whence professors are to be obtained, should be discountenanced, for if once admitted, it might establish claims, or confirm pretensions, that might hereafter be productive of incalculable mischief, and even transfer the right of appointment from its legitimate source to others, or at least render it a nullity.

Important, however, as we may regard the addition of those *aggrégés* to the regular members of the medical faculties of France, and their election after a public concours, viewing the mode in which professors themselves were elected, we do not wish to be understood as bestowing praise on every detail of the organization of that body. There was indeed a point in which it would ultimately have failed, and which would have tended to defeat the object for which they were instituted. It has already been stated, that twelve new *aggrégés* were added every three years to the number already existing. Besides this, all the vacancies occurring, either in consequence of death, resignation, &c. were immediately filled up at a new *concours*. It resulted as a natural consequence of this circumstance, that in the course of some years, the number of *aggrégés* would have been very considerable, and that, if some modification to the plan in force had not been adopted, the number would have embraced all the physicians of the cities where the faculties are located, or at least all those who felt disposed to aspire to either the honour of the *aggregation*, or of a professorship. Under these circumstances, the chance possessed by each, of being chosen to fill a vacancy in the faculty, would have been no greater than that enjoyed before by the members of the profession generally: since, instead of choosing among a privileged few, the faculties, the academic councils, and the government, would have had to make a choice from among the privileged *all*. This choice would then often have been just as much the result of intrigue and management, as if the candidate had been selected from the mass of the physicians within the precincts of the academy; and the other privileges attached to the situation would have ceased to be of any advantage, since they would have been enjoyed by all. In fine, things would have been just as if there had been no *aggrégés*; except, however, that to become a professor, it would have been necessary to pass through two ordeals—the concours, and the presentation, instead of one as formerly. We suspect also, that occasionally fewer applicants would have appeared than there were places to be filled, and that the severity of the exercises would have been necessarily relaxed, in order to ensure the admission of as many candidates as were required by law to fill the twelve places of the *stage*; for it would have proved an awkward position to have had a deficiency in the number of these. It would have destroyed the symmetry of the whole arrangement, and not permitted the possibility of affording substitutes for those whose term of duty had expired. This actually took place in one of the provincial faculties. Already, indeed, before the last revolution, the number of these *aggrégés* at

Paris, and in the other faculties, was too large, and the source whence candidates to vacancies in the schools were to be derived had been too much extended, so that, in the choice for a professor, the administration was left too large a field for the exercise of its partialities, which could not help falling often, as it occasionally did, on the less worthy individuals.

Such was the organization of the faculty and the mode of electing professors when the revolution of July, 1830, broke out. In our last communication we stated that by the ordonnance of Louis Philip, dated the 5th of October, which revoked the obnoxious ordonnances of 1822 and 1823, it was ordered that vacancies occasioned by the death of some of the old professors, who were reinstated in their chairs, should be filled, as formerly, by a public *concours*. It remains now to state, that the same formality was enjoined in all subsequent elections. This measure, which was demanded by a considerable majority of the profession, not only as a matter of right, because it had been established by law and abolished illegally by an ordonnance, but also as the most proper to ensure the admission into the faculty of men of talents, and the exclusion of ignorant pretenders, was, however, opposed by some who preferred the mode by presentation—by others again who advocated the method of simple nomination by the academic council, by general election among all the physicians of the place, &c. But the partisans of these methods were few in number in comparison with those who advocated that by *concours*, a circumstance which doubtless contributed in confirming the government in the idea of prescribing the latter in all vacancies that might subsequently occur in the faculties.

But before we proceed any farther we must be allowed to correct an error which crept into our last article. It is there stated, that in consequence of the changes effected in the faculty of Paris by the ordonnance of October, 1830, the body of the *aggrégés* was necessarily suppressed. We should merely have stated that the *privileges* conceded to these supplementary professors—of being alone allowed to deliver private lectures and the only class eligible to professorships, both of which were violently opposed as unjustifiable monopolies and as preventing emulation, were suppressed by that ordonnance.

The body itself, thus shorn of its obnoxious privileges, and reduced in its functions to supplying the place of absent professors, and to a participation in the examinations, was retained.

“Cette institution,” to use the language of the Duke of Broglie, in his report to the king, “offre de grands avantages sans aucun inconvénient: les concours par lesquels on y parvient mettent au jour les talens naissans; ils fournissent à

la faculté des sujets qui se forment sous la direction de professeurs expérimentés, deviendront d'excellens candidats pour les concours aux chaires, et n'excluront pas cependant ceux qui auraient pu se former par d'autres moyens; il n'est par indifférent non plus que ces jeunes agrégés assistent aux examens des docteurs, et que par le mode de rotation établi, ils changent successivement, tandis que le corps de professeurs demeure permanent; c'est une surveillance bonne à exercer sur la sévérité des examens et qui aura même indirectement de l'influence sur les cours, car les examens, les questions que l'on y fait, les réponses que l'on obtient, sont un excellent moyen de s'assurer que les leçons des professeurs suivent les progrès de la science, et que les cahiers une fois préparés, ne demeurent par la base des cours, lorsque des découvertes importantes ont changé les doctrines qui en faisaient le fond."

But while reëstablishing the concours for all the chairs in the faculties of medicine of France. (for the minister states, in his report to the king, from which we have made the preceding extract, that the principles on which the projected ordonnance, that of the 5th of October, is based, must be equally applicable to the schools of Montpellier and Strasburgh,) the government introduced some modifications in the mode of conducting it. The argumentation is omitted, on the plea, that in the heat of the debate, candidates are sometimes carried beyond the bounds of decorum. Among the elements on which the judges are to establish their decision, a discussion on the anterior services and writings of each candidate is introduced. The trials at a *concours* for the chairs of clinic are in great measure limited to the above discussion, and to a few other exercises of a very trifling character. The whole exercises are gone through in French, and government, in order to place things on the old footing, gives up the right of selection from among several candidates; a right which was held by the former government in the concours for the agrégés.

The following will present a full view of the regulations of the concours.

SECTION I.—*Composition of the Jury of the Concours.*

Article 1st. The jury of the concours is composed, 1st, of eight professors of the faculty of medicine of Paris; 2d, of four doctors in medicine or surgery, or academicians who are not professors of the faculty, and who are selected in a manner presently to be mentioned, in the Royal Academy of Medicine, in the Academy of Sciences, or among the physicians and surgeons of the hospitals.

Article 2d. The judges selected from among the professors, are, 1st, for the chairs of natural philosophy, chemistry, medical natural history, pharmacy, and *materia medica*; the professors attached to these chairs, and in addition to them the professors of anatomy, physiology, hygiene, and legal medicine.

2d. For the chairs of surgical clinic and surgical pathology, operations, obstetrics, of obstetric clinic, and of anatomy; the professors attached to these chairs, less one of surgical clinic, who will be excluded by lot.

3d. For the chairs of medical clinic and medical pathology; the professors attached to those chairs, and in addition, the professors of physiology, *materia medica*, and hygiene.

4th. For the chairs of physiology, hygiene, and legal medicine; the professors occupying those chairs, and the professors of anatomy, natural philosophy, chemistry, obstetrics, one of the six professors of surgical clinic and pathology drawn by lot, and one of the six professors of clinical medicine and medical pathology, also chosen in the same way.

If by rejection, (*récusation*), or any other cause, one or several professors of the four preceding series are prevented from performing duty, substitutes will be provided from among the professors of the three other series.

Article 3d. The judges selected out of the faculty are as follows:—

For chairs of anatomy, physiology, medical and surgical clinics and pathology, obstetrical clinic, surgical operations, obstetrics, hygiene, *materia medica*, legal medicine, and pharmacy, four doctors in medicine or surgery, chosen by the academy of medicine in the corresponding section or sections of that body. Two of them must be selected from among the physicians and surgeons of the hospitals.

2d. For the chairs of natural philosophy, chemistry, medical natural history; four members of the Academy of Sciences chosen by that body, to wit, for the chairs of natural philosophy and chemistry in the two sections of natural philosophy and chemistry; for the chair of natural history in the three sections of natural history.

Article 4th. To these twelve titular judges will be added three supplementary ones, (*suppléans*), two of whom will be selected from among the members of the faculty, and drawn by lot, and one chosen by the Royal Academy of Medicine.

These supplementary judges will attend at all the sittings of the *concours*, and will supply the place, the two first of the professors of the faculty, and the third the place of the judges not attached to that body, whenever these may be obliged to absent themselves during the continuance of the *concours*. Under no other circumstances are they allowed to take part in the deliberations of the jury.

Article 5th. The titular and supplementary judges elect by ballot the president and secretary of the jury.

SECTION II.—*Of the Conditions required of Candidates.*

Article 6th. In order to be entitled to present himself as a candidate to a chair in the faculty of medicine of Paris, every individual must be, 1st, a Frenchman by birth or by letters of naturalization; 2d, full twenty-five years of age at the moment of the inscription; 3d, and either a doctor in medicine or a doctor in surgery.

SECTION III.—*Of the Trials of the Concours.*

Article 7th. The *concours* is composed of four kinds of exercises or trials:—

1st. The appreciation of the anterior claims of each candidate, made at an assembly of the judges, and at which the merit of his writings and services is fully discussed.

2d. A printed dissertation handed in to the jury twenty days before the opening of the concours, and the subject of which consists in general views on the disputed chair, and on the plan and method that should be adopted in teaching the particular branch.

3d. A written answer to a question drawn by lot, and which is the same for all the candidates, made in a close room, (a huis clos,) and during a space of time which is the same for all. The candidates afterwards come in rotation, and read their compositions at an assembly of the jury.

4th. A lecture delivered after a day's preparation, on some subject connected with the object of the chair—each candidate drawing by lot the subject on which he is to lecture.

5th. A lecture delivered after three hours preparation, on a subject drawn by lot, and which is the same for all the candidates who can go through that trial on the same day.

Article 8th. The candidates for the chairs of clinic are exempted from these last mentioned trials, to which is substituted two clinical lectures delivered in the lecture room of one of the clinical hospitals of the faculty, after the visit of some patients selected by the jury.

Article 9th. The lectures are an hour in duration—they must be oral, and the candidates cannot make use of any other than simple notes.

SECTION IV.—*Of the Judgment of the Concours.*

Article 10th. Immediately after the last sitting of the concours, the judges assemble and elect by secret ballot, and by a majority of the whole, the successful candidate. Nine constitute a quorum. In case of equal division, the president has the casting vote. The judgment is immediately announced to the public.

Article 11th. The mode of balloting is the same as for the election of members of the academy of sciences.

Article 12th. The candidate elected at the concours receives the investiture of the office from the grand master of the university.

Each of the professors received, and we believe continues to receive, a fixed salary of three thousand francs, besides ten francs for every examination at which he is present. The president at the last examination, (thesis,) receives fifteen francs. Every professor who is designated to be present at any *act* of the faculty, and absents himself without leave of the dean, is fined. If he absents himself without leave, and does not perform his duties at the school, he loses his salary during the whole time of his absence. Professors who in their lectures, discourses, or in their social intercourse, disregard the respect due to religion, morality, or government, or in any scandalous way compromises his reputation or the honour of the faculty, is referred by the dean to the academic council, and the latter, according to the extent of the offence, pronounces either his suspension from duty or his final expulsion. The punishments to which the professors are amenable, are, 1st, arrests; 2d, reprimand in presence

of the academic council; 3d, censure in presence of the council of the university; 4th, transfer to an inferior office; 5th, suspension from their functions for a fixed period, with or without a total or partial privation of their emoluments; 6th, leave of retirement before the time of *emeritus*, with emoluments lower than the pension allowed under the latter circumstance; 7th, erasure from the list of members of the university. This is a most severe punishment, as it prevents the individual subjected to it from ever filling an office in any of the public departments.

Two weeks before the commencement of the scholastic year, each professor submits for the examination of the faculty the programme of his course. Each of the courses must be completed before the termination of the year, the faculty determining, before the commencement of the lectures, the duration of each course. The general programme is then published and posted up.

The dean of the faculty is chosen every five years by the grand master of the university from among the professors. His functions are revocable. He is the chief of the faculty; and is charged with the administration and police of that body. He superintends the expenditures; calls and presides over the meetings of the faculty; appoints all the committees: orders when necessary the suspension of a course; and has the casting vote in case of a division of sentiment respecting nominations, presentations, &c. Independently of his emoluments as professor, the dean receives a salary of three thousand francs per annum. The faculty appoints every year two of its members to aid him in fulfilling his functions, to supply his place in case of absence, &c.

To this account of the members of the faculty, it remains to add, that when on duty the professors were obliged to wear peculiar costumes. Those costumes were two in number, the one richer than the other. The first of these was only worn on grand occasions, and consisted in the following articles: 1st, a black, French fashioned coat; 2d, a crimson satin robe with black silk facings; 3d, a cambric cravat with long ends falling in front of the chest; 4th, crimson silk cap ornamented with a gold band; the dean's cap had two; 5th, crimson silk breeches trimmed with ermine. The second, or little costume, was worn only at the private meetings of the school. It differed from the other only in the robe, which is made of black *étamine*, with crimson silk facings; the rest of the dress was the same. When the members of the faculty assembled together to transact business, they had at their orders a beadle, dressed with a black coat and a cloak of same colour, and carrying a silver mace. In their lectures, how-

ever, the professors did not adhere very strictly to the regulations respecting their costume; for they often appeared before the class in a common black suit, without robe or cap, and we never perceived that any of them wore crimson breeches.

We are now met with a question on which the ingenuity of writers on medical institutions has been exercised, and on which we believe opinions are diversified. Whether the plan of allowing regular salaries to the professors of medical faculties is a good or a bad one? Without enlarging much on this subject, we must be permitted to remark, that so far as we are prepared to decide, we believe that the plan pursued in France, is better than is generally admitted. Some we are aware will say, that if a professor receives a regular pecuniary remuneration for his services, he soon loses all the emulation and activity he displayed in the beginning; while on the contrary, a man who knows that his emoluments depend on the number of his pupils, strives to render his course better and more attractive every year. All this is, to a certain extent, very true; but it would be easy to point out instances in America where the very reverse of these results occur—where regularly paid teachers, (in other departments of knowledge,) perform their duty with praiseworthy zeal and talent, and where, on the other hand, teachers whose emoluments are derived from students attending their lectures, have from a knowledge that the purchase of their tickets is essential for graduation, or from other causes, become negligent in the extreme, and have finally performed their duty in a manner little creditable to themselves or profitable to their class.

The system of regular salaries ensures the power on the part of the administration, to enforce on the professors the performance of their duty and the observance of the rules of the school, a point on which much difficulty will often be experienced when the other system is adopted. Besides, in France the emoluments of the professors are not limited to a fixed salary, which we are willing to admit would be attended with some inconvenience. They have, as we have seen, an *eventual* pay, as it is called there, arising from graduation and examination fees, &c. The result of this is, that the teachers are as much interested in making their lectures attractive and instructive as those of our own schools, while the regular salaries they receive, place them as effectually under the *surveillance* and direction of the administration as if they had no other sources of emolument. Were this *surveillance*, and this subjection of the faculty productive of no other result than that of preventing *aggrégés* and professors from countenancing quackery, it would show the advantage that may accrue from it.

But other advantages of the plan of regular salaries can be pointed out. It ensures in small schools a sufficient compensation to the professors, without which they cannot be expected to devote that time and attention to their lectures which is absolutely necessary for success; and in large schools it ensures the latter a source of profit which may be applied to the improvement of the building, to the establishment of clinical wards, and in various other ways. If we examine what happens in our country, we shall find that in the small schools, the professors are obliged, in order to live, to go through all the drudgery of the profession, and have often no time to read and prepare their lectures; and 2d, that few men of talents will leave their practice in one city to join a school in another part of the country. We find that in large schools, on the contrary, the professors receive emoluments comparatively disproportionate to the services they render, and naturally enough oppose the introduction of any modification, which though likely to benefit considerably the cause of instruction, would curtail them of some portion of their receipts. In such cases the schools themselves are deprived of a source of revenue that might be applied more usefully than in enriching a few individuals, who often finally lose the zeal they might have at first displayed. In our opinion, the most effectual stimulus to emulation, among professors, wherever a system of remuneration similar to ours prevails, will be found in the existence of rival institutions, in different sections of the country. Where this incitement to exertion does not exist, on the contrary, apathy will soon succeed to zeal in the professors, and efforts at excellence will seldom be made by them.

While entertaining these views on the subject, however, we willingly admit, that in our country, so long as the present laws respecting the practice of medicine continue in force, the plan of having professors paid by schools, would, instead of proving beneficial, be attended with bad effect, especially if the lectures were gratuitous; because young men who at present cannot afford to study medicine at all, would be enabled to do so for a few months, free of expense, and would then practice without license, and with only a smattering of knowledge. Be this as it may, however, it is certain that the plan adopted in France, in relation to the mode of selecting professors, is better than the one pursued in Great Britain and America, and we terminate this article with the expression of the hope that some beneficial changes may take place before long on that point, in the medical colleges of both countries. R. LA R.

REVIEWS.

ART. IX. *Precis d'Anatomie Pathologique.* Par G. ANDRAL, Professeur, &c.

A *Treatise on Pathological Anatomy.* By G. ANDRAL, Professor to the Faculty of Medicine of Paris, &c. Translated from the French by RICHARD TOWNSEND, A. B., M. D. &c. and WILLIAM WEST, A. M., M. D. &c. Two volumes, 8vo. pp. 698 and 808. Dublin, 1829.

THE history of sound, scientific pathological anatomy, that pathological anatomy which has created a distinct era in our profession and is destined to form the ground-work of modern medicine, freed from loose conjecture and ingenious hypothesis, hardly dates beyond the labours of the present French school of contemporary writers. The *Chronic Phlegmasiæ* of BROUSSAIS, we consider as the efficient pioneer in subverting that vicious mode of considering and investigating disease which had been so long consecrated by time and authority. That work has not only brought us intimately acquainted with an obscure and important class of diseases which had been in a great measure overlooked or mistaken, but what is even of more importance, it also furnishes us with the first well-digested example of philosophical induction applied to the investigation of disease, by strictly connecting the morbid alterations of structure found after death with the various symptoms the disease exhibited in its progress, from its commencement to its termination, and at the same time duly estimating the agency of the different causes, as well external as internal, that may have been instrumental in the production or modification of the pathological condition. The *Chronic Phlegmasiæ*, it is true, was preceded a short time by PROST's *Médecine éclairée, par l'observation et l'ouverture des corps*, which appeared in 1804, and CORVISART's *Essay on the heart*, published in 1806. Yet these works, although admirable specimens of sound pathological research, as are also BAYLE's *Researches on Phthisis*, which appeared in 1810, only two years after the *Chronic Phlegmasiæ*, seem to have exerted no material influence in leading physicians to the study of morbid anatomy in the spirit that has since distinguished the modern French school.

With more justice perhaps we might go one step further back. To BICHAT, in strictness, belongs the merit of having laid the foundation

of this improved method of investigating disease. Even Broussais acknowledges that his system of doctrines is the legitimate offspring of the *Anatomie Générale*, nor have others denied their many obligations to its immortal author. It was not however permitted to Bichat to follow out to any extent his own principles in their application to pathology; for his *Pathological Anatomy* cannot be viewed other than as an earnest of what might have been expected, had not death arrested him in early manhood amidst his brilliant career.

If we go further back we shall find little to compare with the science of the present day. BOXERUS, towards the close of the seventeenth century, (1679,) undertook the laborious task of collecting the innumerable observations of pathological facts that had been made since the revival of letters, which may be considered the birth-time of the science, and of presenting them in a systematic form as a summary of what was then known on the subject. Although his work exhibits great and glaring faults, incident to the imperfect cultivation of the science in those early times, and a mass of confused and contradictory doctrines that were then prevalent, it every where evidences extensive erudition and an enlightened observation, and is not wholly worthless even at the present period when sounder views prevail.

MORGAGNI's great work, (*De sedibus et causis morborum per anatonien indagatis*, 1766-7,) however he may have severely criticised the labours of his illustrious predecessor, is not altogether free from the same faults, and exhibits besides a prolixity that would be quite insufferable, were it not for a certain quaintness of manner that keeps the attention awakened by its novelty. Still it possesses higher claims to distinction than the *Sepulchretum*: it connects the organic lesions with the attendant symptoms more clearly than had been done before his time, and sometimes traces them to their respective causes with a perspicuity and a cogency of reasoning that even at this day calls for our admiration. The work was undoubtedly at the time of its appearance, and for many years after, a valuable acquisition to the profession, as a vast repository of authentic facts—a sort of anchoring place, where the mind could rest upon something positive and demonstrative as far as it went, if not always entirely satisfactory, aside from the thousand ingenious speculations and idle theories that for the most part engrossed the attention of physicians.

The *Historia Anatomico-medica* of LIEUTAUD, (1776-81,) is the next work of importance after that of the learned Italian, but in every respect inferior to it. Its arrangements are extremely loose and imperfect, the cases curtailed and often without definite object, and the

whole forming a medley that will not often be consulted at the present time.

Dr. BAILLIE's work, considering the time at which it appeared, toward the close of the eighteenth century, is exceedingly defective. It exhibits little of the laborious research of Morgagni, or the sagacity of his great relative, HUNTER, and none of that spirit which characterizes the productions of the present day. It is concise in its delineations, and, if we may be allowed the expression, its sketches of the morbid alterations as revealed after death, hold no very intimate relations with the symptoms exhibited during the course of the disease, and the whole resembles rather a *catalogue raisonnée*, or a science of pure curiosity, than an investigation into the character and causes of disease.

Many authors succeeded these great men, who pursued their pathological researches in the path traced out by Morgagni, but none of them have left works that claim particular mention in this cursory survey. If such are the imperfections of the works that were universally esteemed the great classics in pathological anatomy before the appearance of the *Chronic Phlegmasiæ* in 1808, how very far below that admirable work and its numerous successors must we place them, in comparing their desultory and heterogeneous mass of ill-arranged facts, with the concision, minuteness, accuracy of detail, and systematic form that the science has attained within a few years in France. It would lead us too far from the object we have now in view to notice even succinctly the most remarkable of these works. Together they constitute a body of fact and doctrine that is rapidly giving to the healing art the stability of a science, and to the practitioner surer and more palpable principles of conduct at the bed-side of sickness. Whoever therefore shall wish to make himself acquainted with a pathology based on correct notions of healthy and morbid structure, and of the vital phenomena of the economy, must apply himself to the study of the works of such men as BROUSSAIS, LOUIS, LAENNEC, GENDRIN, ANDRAL, and CRUVEILHIER. Before passing on, we will merely mention, for we cannot afford the space to enter fully into the subject on the present occasion, that the French pathologists are divided into two sects. The one, at the head of which stands Broussais, profess to be the legitimate interpreters of Bichat's views, by connecting the morbid alterations with the vital laws of the economy, and studying to appreciate the influence of causes in their production and development. Their researches, directed in this spirit, have given birth to a system of doctrines now well known as the physiological medicine. The other sect, numbering among its ardent

supporters, BAYLE, LAENNEC, DUPUYTREN, CRUVEILHIER, and BRESCHET, study morbid structure apart from the vital actions of the system, and endeavour to found a system of medicine on the different organic lesions appreciable in the body after death. In commending so highly the labours of the French school, we would not however wish to be considered as inferring that other countries have remained all this time idle spectators of their progress. We know it to be otherwise. Of modern German and Italian science, we know too little to be able to speak with much precision; but in Britain of late something has been done, and is still doing, in aid of this improved condition of the science; and in comparing the present state of pathology with what it was but a few years back, we must not forget to appreciate, as having contributed to bring about the present state of things, the labours of ABERCROMBIE, HODGSON, FARRE, ARMSTRONG, BRIGHT, and a few others. *Ruri nantes in gurgite vasto.*

Of the many works on pathological anatomy in France within the period designated, not one of them has excited a higher interest or been more frequently quoted with approbation than the *Clinique Médicale* of Andral. It soon placed its author in the first rank of pathologists, and at the head of the anatomico-pathological school of France. Our own opinion of its merits and defects were succinctly given in the last number of the Journal, in remarking on the translation of Broussais' *Chronic Phlegmasia*, and we need not advert to the subject again in this place. How far his second performance, which it is our business at this time to introduce to our readers, will maintain the same permanent reputation, may perhaps be matter of doubt. The almost daily accession of researches on morbid anatomy, and the advancing triumphs of a science he has himself so efficiently contributed to bring to its present state, will not allow a summary of pathological anatomy, even by Andral, long to keep its ground undisputed; though in our opinion it is the ablest systematic treatise on the subject that has yet appeared. It is more comprehensive than either Gendrin's or Cruveilhier's work, and is based on more modern data than CRAIGIE'S *Treatise*, the only works we are acquainted with that can be placed in competition with it. For LOBSTEIN'S *Treatise* is not sufficiently advanced to enable us to form a decided judgment of its merits, and RIBES, (see his *Anatomie Pathologique appliqué aux Maladies*,) is too deeply involved in the mysticisms of the doctrines of BARTHEZ and the Montpellier school, to permit him to write with profit for the present age. With MECKEL'S work we are unacquainted, but we suspect it does not sustain so high a rank in Europe as his other productions. We may therefore fairly look up to Andral's

treatise as likely to become the text-book of physicians in this department of science for some time to come; with what advantage, our readers may perhaps form some idea from the analysis we shall endeavour to give of its prominent doctrines and general principles.

The work is divided into two parts sufficiently distinct. The first treats of *general pathological anatomy*; in which the principles that apply to lesions in general, their external form, intimate structure, and mode of production, are considered. In the second, these principles are applied to each of the organs of the system respectively, and the different derangements of each are investigated, which constitute the department of *special pathological anatomy*.

Andral banishes almost entirely from his work the term inflammation, as an antiquated expression, only calculated to render the language of the science vague and confused. He views the term as describing a complex morbid state, which he divides into its elements, treats of each of them separately, and endeavours to appreciate their presence and influence in the different lesions that occur in the system.

The elements of all morbid alterations are comprehended under five heads: lesions of circulation, of nutrition, secretions, of the blood, and of innervation. This system of pathological alterations is founded on the following data. The three phenomena of circulation, nutrition, and secretion, are considered to constitute the fundamental principles of organization common to vegetables and the lower order of animals; but in man, and the higher order of animals possessing a nervous system, a fourth phenomenon is superadded, which exercises a powerful influence and controul over the others, denominated innervation. Finally, since all the materials of nutrition and secretion are derived from the blood, the qualities of this fluid must exercise a very material influence over the functions of nutrition and secretion, and the well-being of every part of the economy requires the proper constitution of this circulatory mass. The pathological classification rests on these principles, and are succinctly stated in the subjoined extract.

“The human body, considered in the state of disease, presents only various modifications of those actions which have already been enumerated as essential to man in health. Thus,

“1. The supply of blood usually received by an organ in the healthy state of the system may be altered in its quantity; from such alterations arise the *lesions of the circulation*.

“2. The component particles of the different solids are liable to various alterations in their arrangement, their number, their consistence, and their nature; hence arise the *lesions of nutrition*.

"3. The different secretions which are separated from the blood in the parenchymatous structure of the organs, or on their surface, may be altered either in their quantity, or in their quality; and hence the *lesions of secretion*.

"Moreover, inasmuch as the state of the nervous system, and the composition of the blood, exert a powerful influence over the capillary circulation, nutrition, and secretion, in the healthy state, it is evident, that as they continue to exert the same influence in disease, many of the derangements of these actions must proceed from various alterations of innervation and sanguification.

"In conformity with these views, I propose dividing into five sections the various morbid alterations to which the human body is liable.

SECTION I.		{ Increase of quantity of blood.	
Lesions of Circulation.		{ Diminution of quantity of blood.	
SECTION II.		{ Alterations of the arrangement of the elementary particles.	{ Malformations.
		{ — of their number.	{ Increase. { Hypertrophy.
			{ Diminution. { Atrophy.
		{ — of their consistence.	{ Softening. { Ulceration.
			{ Induration.
SECTION III.		{ — of their nature.	{ Transformation.
		{ Alteration in the quantity of the secretions.	{ Increased quantity. { Effusion.
			{ Diminished quantity. { Flux.
		{ — in their situation - - -	{ Development in an unusual situation. { In substance.
			{ Translation to an unusual situation. { In elements.
SECTION IV.		{ — in their qualities - - -	{ The natural secretion modified in its composition.
Lesions of the Blood.		{ A new secretion.	{ Primitive.
SECTION V.		{ Alterations in the Physical properties of the Blood - - - - -	{ Consecutive.
Lesions of Innervation.		{ — of its Chemical properties -	{ Primitive.
		{ — of its Physiological properties	{ Consecutive."

Lesions of the Circulation.—These lesions are divided into two principal classes. In the first, *hyperæmia*, the quantity of blood in the capillary system is preternaturally increased. In the second, *anæmia*, it is diminished in quantity.

Hyperæmia is subdivided into four species:—1. Active or sthenic. 2. Passive or asthenic. 3. Mechanical, from venous obstruction. 4. Cadaveric, from physical laws, after vitality is extinguished.

1. *Active Hyperæmia*.—Some local congestions are perfectly compatible with a healthy state of the system, as those arising from moral emotions and violent exercise. Others again, though not amounting to disease, as redness from heat, or a slight irritation, cannot be considered as healthy phenomena. These conditions pass by insensible gradations into a pathological state, and in like manner also into inflammation. In order for these congestions to take place it is not necessary that there should be an undue quantity of blood in the system, for they frequently occur in debilitated individuals, whose blood is neither abundant in quantity, nor rich in quality. When a hyperæmia occurs in one organ, there is a strong tendency to form secondary congestions in other organs closely connected with the affected part; while, in other instances, by a law of compensation, other organs are deprived of their healthy proportion. It is the characteristic of some diseases to produce uniformly a simultaneous congestion in two or more organs, as the measles, scarlatina, and typhus, and pestilential fevers arising from the introduction of a deleterious principle into the circulation. Not only so: the hyperæmia may exist in every organ of the body at the same time, from the general capillary system being overloaded with blood, and the whole system in a state of plethora. Under the influence of this general state, serous effusions, unaccompanied with inflammation, take place into the cellular tissue and into the different serous cavities. These effusions seem to arise simply from the mechanical effects of the over-distention of the vessels, and are the active dropsies of authors which require the use of bleeding and other evacuants for their removal. Also this general hyperæmia, from the excessive supply of blood, and the general excitation induced, sometimes produces, through the associating medium of the sympathies, a general inordinate reaction: in consequence of which the phenomena of fever are fully developed, constituting, in its moderate grade, the simple continued fever of authors. But when the intensity of the reaction of the different organs is great, it gives rise to alarming nervous symptoms, adynamia, &c. And, finally, it is converted from a general into a local affection, when the reaction centres itself on some one organ. Occasionally these congestions, especially in tissues that have undergone some morbid alteration of structure, assume an intermitting type, and in this way organic lesions, that would otherwise escape detection, are revealed. The only appreciable modification that simple hyperæmia exhibits is change of colour. This alteration is often produced by an increased quantity of blood circulating in the part, but on other occasions proceeds from the gradual accumulation of this fluid, which

is retarded in its course, and eventually becomes perfectly stagnant. The experiments of BROUSSAIS, WILSON PHILIP, HASTINGS, and GENDRIK, show that there are several degrees of hyperæmia. In the first, the vessels are contracted, and the circulation accelerated; in the second, the vessels dilate, the blood circulates more slowly, its particles tend to coalesce, and seem disposed to coagulate; and, finally, in the third, the blood becomes perfectly stagnant, the part assumes a deeper brown, and at last becomes quite black.

It does not seem to us that the causes of hyperæmia, its mode of action, and influence in producing disease, are examined very satisfactorily or ably. Indeed, in investigations of this nature the author falls very far short of that rigid scrutiny and comprehensive survey of details which characterize the physiological physicians.

2. *Asthenic Hyperæmia*.—This is the result of diminished tone of the capillary vessels which no longer possess the requisite force to propel forward the blood as fast as it is received, and is often consecutive to the active form on the subsidence of the original irritation leaving the vessels permanently dilated. It is essentially different from inflammation: indeed, *passive inflammation* is a manifest contradiction of terms, and can have no existence. The violet blotches that frequently occur on the legs and feet of old persons is of this kind, and it is frequently the cause of gangrena senilis in such persons, by the arrest of the blood in the capillaries of the feet allowing it to coagulate and obstruct the circulation. It takes place also in scurvy, in the last stage of malignant fevers, convalescence from pulmonary disease, &c.

3. *Mechanical Hyperæmia*.—This term comprehends the sanguineous congestions formed during life by an impediment to the free course of the venous circulation, which a mechanical obstacle presents to the return of the blood from the capillaries. The alterations induced are, 1, change of colour; 2, morbid exhalations; 3, modifications of size and consistence of the parts affected.

“The alteration of colour which accompanies every mechanical hyperæmia, results exclusively from the accumulation of blood in the capillary vessels, and may be either bright red, violet, or brown, more or less deep in shade. In the first stage of this affection, the congestion is confined to the veins of considerable calibre; the transparency of the tissues is not affected, nor is their natural whiteness altered, except where those veins apparently varicose are distributed. In a second stage, veins of a less calibre become congested, and if the tissue affected be membranous, several minute vessels are observed ramifying in an arborescent form on its surface; if the seat of the hyperæmia be a parenchymatous organ, an unusual quantity of blood issues from the part when pressed or simply divided. Thus, in such a case, the brain, when sliced, presents nu-

merous red points; which are nothing else than the divided orifices of the congested vessels; while a section of the liver presents an uniform red appearance, &c. Lastly, in several parts of the cellular tissue, which is interposed between the different organs or parts of the same organ, a number of minute vessels filled with blood are seen ramifying in every direction; in such cases, the cellular sheath of the arteries is sometimes beautifully injected, and the vasa vasorum admirably displayed. In a third degree, the most minute vessels become injected, and are so distended that they appear literally to touch and crowd each other; the tissue thus mechanically congested presents an uniform red, brown, or even black colour.

“When the mechanical hyperæmia is carried to a certain extent, other phenomena may arise as its consequence. Thus, the serous portion of the blood, or even pure blood, may escape from the over-distended vessels, just as water or any other liquid transudes through the permeable sides of a vessel in which it suffers compression. To this source are to be referred several hæmorrhages and dropsies produced by simple transudation in a tissue mechanically congested; and although these effusions have really nothing active in their nature, yet are they considerably diminished, and sometimes altogether removed, by blood-letting, which in such cases acts in a manner purely mechanical, by removing from the vessels the fluids by which their parietes were kept in a state of over-distention. These pathological observations are well exemplified in the majority of those cases of hæmoptysis, hæmatemesis, ascites, and other effusions which are connected with organic disease of the heart.”

4. *Cadaveric Hyperæmia*.—The congestions that take place after death, are various in their cause, appearance, and seat, and are liable to be confounded with vital alterations. The empty condition of the large venous vessels will generally distinguish them from such as arise from mechanical obstructions during life. When produced at the moment of death, they arise from the contractility of the tissue of the small arteries acting after the cessation of the heart's action; but when they take place some time after, they may be caused by dependant position, by transudation of fluids through the parietes of vessels, and by chemical affinities.

All these different species of congestions are liable to give rise to the escape of blood from its vessels, and its effusion either on the surface of the membranes, or into the cellular and parenchymatous texture, even after death. Hæmorrhage may almost be considered one of the natural terminations of active hyperæmia, although we can assign no reason why it should occur in some cases, and in others produce pus, serous effusion, induration, softening, or ulceration; but they are all doubtless connected by one common link, as they occur under apparently the influence of the same causes. BOERHAAVE's experiment of tying the vena portæ, and hæmoptysis from aneurisms of the heart, show the capacity of mechanical obstacles of the circulation to produce hæmorrhages. All hæmorrhages, however,

do not depend on increased vascular action. Some arise exclusively from some modification of the organic disposition of the coats of the vessels allowing the blood to escape, and others again arise from an impoverishment of the blood, as in scurvy, general debility, and the sequelæ of profuse hæmorrhages. Other instances of hæmorrhages from passive congestions have already been noticed.

Anæmia.—This is the reverse of hyperæmia, and the organ affected contains a less quantity of blood than circulates through it in a healthy state. It is more or less complete, and may be local or general. In the local anæmia the calibre of the artery is very commonly less than natural, which may exist either as cause or effect. Sometimes the organ is merely paler than in a state of health; in other cases it is diminished in bulk, its texture softened, and its secretions in some few instances preternaturally abundant. *General anæmia* may supervene without appreciable cause, but most usually it may be traced to the use of food not sufficiently nutritive, and the habitual respiration of a moist impure air in places excluded from the free admission of the sun's rays, or to some organic lesion which affects the process of hæmatosis. It sometimes succeeds to profuse hæmorrhages, or indeed may proceed from any cause which diminishes the general mass of blood, or hinders its due supply. Its most ordinary form is the chlorosis of young females, where it seems to arise from a deficient hæmatosis.

Lesions of Nutrition.—The function of nutrition is liable to various modifications; 1, in the arrangement and distribution of the elementary molecules in the several tissues, constituting monstrosities; 2, in the number of the molecules, constituting hypertrophies or atrophies; 3, in their consistence, constituting indurations or softenings; 4, in their nature and properties, constituting transformations of one tissue into another.

Monstrosities.—These are congenital aberrations of nutrition, which produce a conformation of one or more organs, different from that which naturally belongs to the species or sex of the individual. LITTRE first advanced the idea, that a certain number of these monstrosities, was the result of an arrest or suspension of the progress of the development of the fœtus, and those cases which do not arise from any such suspension, have nevertheless been reduced to certain determinate laws in their aberrations. They may all be referred to two classes, viz. vicious conformations, generally congenital, and alterations of structure, seldom occurring until after birth.

“The development of the fœtus may be modified in various ways: sometimes the formative process, or *nîsus formativus*, as it has been termed, possesses less

energy than natural, and the development of the organs is in consequence suspended, in which case they are found either imperfectly formed, or altogether deficient; sometimes, on the other hand, this force seems to acquire an excess of energy, and then there is a corresponding excess of development, and the organs exceed their natural limits, either in size or number. In other cases again, the development cannot be properly said to be excessive or defective; but the formative purpose appears to have been simply perverted, thus producing various modifications in the direction and situation of the organs. We have examples of this in the general transposition of the viscera, and in certain varieties in the origin of the principal arteries."

"Whatever be the nature and number of these malformations, the implicit obedience to certain laws which nature constantly observes in the midst of these apparent anomalies, is very remarkable. Thus, the situation of the organs has never been so perverted, that the lungs were placed in the skull, or the brain in the pelvis; nor have the organs been observed so confounded together as that the alimentary canal, for instance, made a continuous tube with the aorta, &c.; all of which would no doubt occur, if certain laws did not still preside over this state of apparent disorder and confusion. Another illustration of the existence of these laws is, that man and the higher orders of animals, may present such an arrest in their development, that several of their organs shall represent exactly the natural state of these parts in the inferior animals; whereas the latter can never attain such a degree of development, as that their organs shall resemble the corresponding parts of the higher orders. Thus, for example, the human brain, arrested in its evolution, may present an appearance more or less exactly analogous to the brain of fishes or reptiles, but the simple brain of these animals can never attain the degree of complicated structure which the human brain presents. Several malformations may exist together in the same individual; indeed, such is perhaps the most frequent case, whenever the deformity is at all considerable. Sometimes these various malformations are all of the same class; or in other words, are all produced by the same cause, for instance, by an excess or a deficiency of development. Such vices of conformation constitute the *compound monstrosities* of Meckel; while his class of *complex monstrosities* comprehends all those which result from the existence in the same individual of malformations belonging to different classes.

"The complex monsters, in Meckel's acceptance of the term, are the most common. Several of them result from the law so ingeniously conceived by M. St. Hilaire, which establishes that the exuberance of nutrition in one organ involves to a partial or less extent the total or partial atrophy of some other organ, and *vice versa*. Innumerable applications may be made of this law of compensation, as it is termed, to the study of monstrosities. Thus, in several individuals who have on one hand or foot, supernumerary fingers or toes, the hand or foot of the opposite side has fewer than ordinary."

Monstrous formations from excess or deficiency of development, occur much more frequently in external parts than in internal organs, but irregularity of form much more frequently in those organs which are principally supplied by the great sympathetic, than such

as derive their nerves from the cerebo-spinal system. Female monsters are more frequent than those of the male sex. Of eighty monsters examined by MECKEL, sixty were females and only twenty males. This excessive proportion of females may be attributed to the fact, that in the early stage of foetal life there is but one sex, the female, and that the genital organs are most commonly arrested at an early period of their development. The hereditary nature of certain malformations is established by many curious facts, but we regret that our limits will not permit us to go further into this subject which our author treats with learning and ability.

Hypertrophy.—This is an increase of the constituent molecules of a solid, commonly arising from the exuberance of the nutritive powers of a part, and should be restricted to those cases where the tissue retains its natural structure and organization. This affection is to be studied in the several elementary tissues, and in the organs formed by a combination of these tissues. A part hypertrophied acquires a greater degree of firmness and density, with increased bulk; and where the tissue naturally presents a certain degree of density, it often assumes a dull white or grayish colour, with a degree of hardness approaching to cartilage, or a substance resembling the interior of a turnip. It is this kind of alteration of the cellular tissue, when it occurs in laminated or rounded masses, which has been denominated *scirrhus*, and in other cases *encephaloid*, from some rude resemblance to cerebral substance. The serous membranes, which are a peculiar form of cellular tissue, have never been found to exhibit this exuberance of nutrition, though its subjacent tissue frequently has. The tegumentary tissues, both mucous and cutaneous, are on the contrary often affected. In a case of this sort the cutaneous covering exhibited distinctly a regular order; 1, the corium; 2, the papillæ; 3, the internal white layer; 4, the rete mucosum; 5, the horny layer; 6, the epidermis of which the skin is naturally composed. Little is known of the tendency of cartilage to become hypertrophied, but the fibrous, osseous, nervous, and muscular systems frequently present this alteration. The minute vessels that convey the blood through the various tissues, occasionally acquire an unusual development, and present the appearance of vegetations clustered together, not unlike polypi, in others resembling the spleen in texture with its areolæ gorged with blood, and in others again forming an accidental erectile tissue. The size of an organ is not invariably increased in this affection, for while one of its tissues only is hypertrophied, the others may fall into a state of atrophy, and thus even cause a diminution in the bulk of an organ. Irritation or excessive nutrition is not the sole

cause of this disease; the assimilating powers may remain in their natural condition, and the powers of disassimilation be decreased, and produce the same effect. The existence of such a cause accounts for the good effects sometimes obtained from the use of stimulants, as iodine and mercury, in their treatment. A third kind may depend upon an alteration of the function of nutrition generally, as seems to be the case in scrofula.

Atrophy.—This state is produced, 1, by diminished supply of blood; 2, by diminished nervous influence; 3, by the suspension of the function of the part; 4, by imperfect sanguification; and 5, by irritation. This last cause operates indirectly from the law of compensation, some other tissue or organ labouring under increased activity of nutrition. While in hypertrophy the part commonly receives an increased supply of blood, in this affection it is diminished. So also are its characters the reverse of the former; the volume of the part is lessened, if a membrane, thinned, its texture generally softer and paler than natural, and it is not unusual to have an undue quantity of fatty matter deposited around it.

Ulceration.—This is a solution of continuity in a tissue produced by absorption of its molecules. It is preceded, 1, by a state of hyperæmia, most commonly sthenic; 2, by different alterations of nutrition, as chronic indurations of cellular tissue ending in ulceration, and then usually termed *cancer*; 3, by morbid secretions, which, by a law of the economy to accomplish their evacuation, thus open a way to the exterior; 4, by gangrene, which calls for a separation of the dead from the living part. The ulcerative process depends on certain special conditions, which reside neither in the intensity nor the duration of the irritation, and in many cases is not the result of a local affection, but rather an indication of a general morbid condition, as in scorbutic and scrofulous affections.

Induration consists in an increase of the natural consistence of the tissues, without other alteration of their texture. It may result from an alteration in the nutrition of the solid particles, both as a physiological change in the progress of age, and as a morbid production at any period of life; and finally, it may depend exclusively on a modification of the fluids. Pulmonary hepatization is an instance of the latter species, although its morbid texture is preternaturally friable. The induration of the cellular tissue, (skin bound,) of new-born infants, is an instance of the same kind, which doubtless arises from an alteration of the qualities of the fluids exhaled into the cells of the tissue. Perhaps, indeed, the production of scirrhus may be owing to the same kind of effusion of concrete albuminous matter into the

areolæ of the cellular tissue. Often the induration is caused by the conjoint alteration of the solids and the fluids, as around old ulcers. Parts indurated, present very different appearances in form, size, and colour. Sometimes they are pale; in others red, gray, brown, or black. Sometimes their volume is increased, in others diminished, especially when they depend on a condensation of the fluids. Irritation is one of the most constant elements in the production of this affection; but in some instances there is no proof of its existence, and moreover is not of itself sufficient to account for its production.

Softening.—This is a diminution of cohesion of the different elementary tissues, and there is scarcely an organ in the body which has not been shown to be subject to it. Sometimes it affects only one tissue of an organ, as the cellular tissue, that connects together other textures; one of the layers of the mucous or cellular membrane, &c. and in other cases it affects indiscriminately the whole texture of an organ as well as the fluids it contains. It may exist in different degrees, either leaving the solid texture of its natural consistence, but more easily torn or broken down, or the whole reduced to a pulpy mass; or finally, the original structure so altered as to present no appearance of organization. These alterations exhibit very different characters, both as it respects colour and bulk. Sometimes the parts retain their colour, in other instances they are pale and blanched, milky, white, gray, and red; and their bulk increased, diminished, or natural. While induration is almost invariably a chronic form of disease, this affection may be either acute or chronic. This alteration doubtless depends on a modification of nutrition, but what its uniform proximate cause may be, is not ascertained, for, although active hyperæmia is the most constant and striking phenomenon which precedes it, we cannot consider it to be the sole efficient cause, as it is not invariably present; and besides, in some instances, the existence of an irritation or of inflammatory action is wholly incompatible with the condition of the attendant phenomena. Weakened energy of the vital and nervous powers, we are disposed to consider, as the efficient cause of all those varieties which occur in sickly, cachexic infants, whose sum of vitality is actually below the natural standard; also in old decrepid persons, in adults affected with scrofula, rachitis, or scurvy, and in persons of all ages exhausted by chronic diseases, or by food not sufficiently nutritive, as in the animals experimented upon by M. MAGENDIE, where softening of the corneæ was seen to follow protracted abstinence from proper food.

Transformations.—Here the nutrition of a tissue is so modified as to change its nature, and convert it into a totally new form. This

law of transformation of one tissue into another, is one of the most universal facts which organized beings reveal, both in a healthy and morbid state; but all tissues are not equally liable to it, neither does it take place in the same manner in them all. As the cellular tissue was the original matrix of all the others, so they are all susceptible of being reconverted into it. On the other hand, all the tissues except the nervous, and it also where nerve originally existed, may be produced indifferently in the cellular texture, and the nature of the transformation is determined by the nature of the function it is accidentally called upon to fulfil, as cartilage where elasticity is required, and a serous membrane where great friction is called for. Divided tissues are reünited in some instances by the same tissues; in others by different ones, and they are all susceptible of such transformations as take place during the evolution of the foetal state, or in other animals. Thus cartilage may be converted into bone, but never into mucous membrane, and the muscular may be changed into the fibrous, but not into any other. Finally, every tissue, when reduced to a state of atrophy, especially if the function of the part cease, tends to resolve itself into its original cellular tissue. In many cases the first phenomenon which presents itself to our notice, in a part where the transformation is subsequently to take place, is a degree of excitement, attended with more or less sanguineous congestion; in others there is no such indication present, and we are forced to consider the change merely as the result of an aberration of the natural nutrition, without being able to assign its precise cause. The transformation of cellular tissue into serous membrane is a common occurrence, not only from inordinate motion in a part, but also in the parenchymatous substance of organs, in the form of cysts, containing various substances and secretions, which, in some instances, are anterior to the formation of the membrane, as where they contain a coagula of blood, and in others posterior, as where different secretions are contained in multilocular cysts. The transformation of cellular tissue into mucous membrane is rather a rare occurrence. It however constitutes the parietes of old fistulæ of some internal ulcers, without external communication, and sometimes even replaces portions of mucous membrane destroyed. When skin is destroyed, it is regenerated incompletely, being generally composed of corium, and of epidermis only, and a mucous membrane, on being long exposed to the air, takes on an appearance resembling skin. One of the morbid growths which is most evidently formed at the expense of cellular tissue, is fibrous structure in different states of perfection, from cellulo-fibrous tissue to true ligament, and these productions are not unfrequently in turn con-

verted into cartilaginous and osseous transformations, or end in cancers. Muscles, from long cessation of their function, sometimes also are transformed into mere fibrous structure. Cartilaginous transformations are as common as the fibrous, and occur under almost the same circumstances; in many cases they succeed to them. They are found in cellular tissue, in parenchymatous organs, and loose in serous and synovial cavities. It is exceedingly rare to find any tissue, except the cellular, undergoing a real transformation into cartilage. Thus, although we constantly observe the formation of plates of cartilage, immediately under the serous membranes, there is no instance on record, in which the serous membrane itself has been converted into that substance, and where these plates are found on the surface of the liver, spleen, between the layers of the pericardium, between the dura mater and arachnoid, or between the internal and middle tunics of the arteries, the membranes themselves invariably remain intact. The cellular tissue, subjacent to the mucous membranes, is sometimes, though rarely, transformed into cartilage; and perhaps also these membranes themselves, at any rate Laennec records an instance of it. The osseous tissue may likewise undergo this modification of its nutrition from a deficient supply of its calcareous matter; but there is no well-authenticated account of this transformation occurring in the muscular fibre. The osseous transformation is almost exclusively confined to the cellular, the fibrous, and the cartilaginous. If we trace the formation of the human skeleton from its earliest period of development in the fœtus to extreme old age, we shall find the fibrous, and still more the cartilaginous tissues presenting a constant tendency to ossification. The same parts and structures which we have said are most liable to cartilaginous transformation, will be found subject to the osseous in the same proportion. Certain cartilages and fibrous structures are especially prone to this transformation; it is even through them, as an intermediate form, that it is frequently produced, and fractured cartilages are in general reunited by a hoop of osseous matter, which is formed at the expense of the perichondrium.

Lesions of secretion.—The blood, in circulating through the system, is submitted to three species of elaboration. In the first, denominated nutrition, the molecules are acted upon by the plastic power which presides over the formation of tissue, and are appropriated to form a part of the animal structure. In the second, the albuminous matter, in a state of liquid or vapour, is constantly poured out throughout every part of the system, on all the cutaneous, mucous, and serous surfaces, as well as in every areolæ of the cellular tissue. In the third species, the elaboration takes place in certain

organs, exhibiting various degrees of complication of structure, from that of a simple follicle to that of the liver or kidney. Heretofore we have treated only of the first species of lesions of nutrition, and found them to consist in various alterations in quantity or quality of the molecules which compose the different tissues. It now remains for us to treat of the lesions of the other two, which may be divided into four classes. 1. Secretions morbid in quantity. These constitute when retained, *effusions*, when eliminated, *fluxes*. 2. Natural secretions occurring in parts that are not destined to form them in their healthy state. 3. Secretions morbid in quality, which differ more or less, or altogether in properties from the natural secretions of the part; and 4. Morbid gaseous secretions. The quantity of the secretions in the first class may be either increased or diminished, but we shall omit the consideration of *acrinia* for want of sufficient data to illustrate its causes and effects, merely remarking however that one of the first effects of irritation is to produce this state; and that in dissecting individuals who had presented various nervous symptoms during their disease, the only appreciable lesion of the head discovered was often an uncommon dryness of the cerebral membranes.

Hypercrinia constituting effusion.—Dropsies occur exclusively in the adipose and cellular tissues, and serous membranes. The fluid effused presents almost all the physical properties of the serum of the blood, of the bile, uric acid, extracto-mucous matter, an undue quantity of albumen, &c. The chief causes of dropsies are, 1, irritation of the organ affected; 2, sudden disappearance of another dropsy; 3, suppression of certain secretions; 4, alterations of the blood; 5, venous obstruction; and 6, a cachectic state of the system. The irritation may be seated in the part containing the effusion, or in adjacent tissues, and it (the irritation) may disappear, leaving the effusion, or persist till it, together with the effused fluid, is dissipated by appropriate means. On the sudden disappearance of a dropsy, if no evacuations take place by the excretories, it is apt to produce effusion into some other part, in the same way as the injection of water into the veins without drawing off an equivalent quantity of blood causes untoward symptoms. If the due quantity of the serous fluid of the blood be not eliminated from the cutaneous and pulmonary surfaces, as often happens in cold moist climates, (see EDWARD'S *sur les influences des agens*, &c.) it is liable to be effused into the cellular tissue, serous membranes, or into the renal parenchyma, giving rise to dropsy or diabetes. The dropsy that so often occurs during the desquamation of the cuticle after scarlatina, may be attributed to the same cause. Dropsies may not only arise from a superabundance

of blood in the vascular system, as is shown by the attendant symptoms, but also from the habitual use of a scanty, insufficient diet, which impoverishes the blood and deprives it of its due proportion of fibrine, and again, they may arise from the introduction into the blood of the virus of certain reptiles and other poisons which take from it its property of coagulation and render it preternaturally thin. Venous obstruction is a common cause of dropsy; if it be in the vein of a limb, the œdema will be confined to that limb; if in the vena portæ or its branches, to the cavity of the peritoneum; and finally, if in the heart, the effusion will be general. We have no positive proof that an obstruction to the course of the lymph will produce this disease; probably the free manner in which the lymphatic vessels anastomose one with another, obviates the effect that would otherwise be induced. There are doubtless other causes of dropsy which are not appreciable in the present state of our knowledge. Such cases may arise as primary affections, or complicate various chronic diseases, and might even be supposed to depend on a morbid condition of the blood, but of this there is no positive proof, and the subject requires further investigation before we can come to a definite conclusion. Excessive secretions of fatty matter sometimes occur to the extent of being considered morbid. The disease may be either general or local in the form of tumours called *lipoma*.

Hypercrinia producing fluxes.—These discharges may come from membranes or from glandular tissues, and are bloody, serous, or merely an excessive secretion of the different fluids furnished by the secretory organs, as mucous, salivary, bilious, urinary, &c. These fluxes may be either acute or chronic, active or passive, continued or intermittent. The organ whence the discharge proceeds may present the following appearances; 1, a natural condition; 2, a remarkable colouring of tissue; 3, a sanguineous congestion, either active, passive, or mechanical; 4, different alterations of texture. Besides these alterations in the parts whence the flux proceeds, there may be, 1, irritation of the membrane on which the secretion is poured; 2, some modification of the nervous influence; 3, suspension of other secretions; 4, absorption of fluid from serous cavities; 5, elimination from the system of some foreign material taken by absorption. The reason why some diseases, as acute rheumatism, pulmonary tubercles in a state of suppuration, &c. are more prone to give rise to profuse fluxes from the skin, while in chronic gastritis this organ is remarkably dry, is not satisfactorily explained. Can it be that in pulmonary disease the cutaneous transpiration is a substitute for the suspended pulmonary transpiration?

Heterocrinia.—Several of the secretions, or their constituent principles, have been found at a distance from the organs which secrete them in a state of health, and eliminated by other organs. Fatty matter, in small globules, have been detected in the blood-vessels; caseum, a constituent of milk, has been detected in the urine, in the cavity of the peritoneum, and even as an ingredient of pus, where the mammary glands could not have formed it; cholesterine, a constituent of bile, has been found in almost every part of the body; uric acid in gouty deposits, and in the sweat and urea in the blood, in the excretions of the skin, mammary glands, &c. It would appear from all the facts of this kind on record, that the elements of all the secretions exist in various proportions in the blood, and that they are separated from it naturally by certain organs only by their peculiar construction; but that under certain circumstances, those elements are separated by other outlets than those through which they naturally pass. It may be conjectured that this metastasis of the secretory action arises from the blood containing an undue proportion of certain elements of secretion, which call for supplementary outlets for its elimination; or secondly, it may be thought that the elements are separated by the proper organs and afterwards reabsorbed into the general circulation; and lastly, it may be attributed to the natural secretory organ being rendered unfit to perform its function, and thus other organs are called into action to afford an outlet to the accumulated retained elements.

Altered Secretions.—The plan of this work requires that the altered secretions of the different organs should be treated in the second part, when these organs shall come successively under consideration, and in this place we shall notice only the morbid productions which are formed in the place of the perspiratory fluid. It is not, however, always easy to distinguish this alteration from that of the nutrition of the part, and, indeed, they are not unfrequently combined. As the perspiratory fluid exists in every part of the body, the morbid secretion which takes its place may also occur in every part: thus it is that tubercle appears indifferently in parts the most distant and most differently organized. These productions of morbid secretions are of various form and appearance, solid or fluid, inorganic, increasing by juxta-position, or organic, growing by intussusception, and endowed with the properties and functions of vital matter. The inorganic products, composed for the most part of albumen and gelatin, are comprised in the following varieties: 1. Pus. 2. Tubercle. 3. Colloid matter. 4. Fatty matter. 5. Saline substances. 6. Colouring matter. The organic products, which are believed to consist

of the fibrinous element of the blood, poured out, coagulated, and concreted into various forms, may either form a part of the living solid, and be influenced by its actions; or be wholly detached from it, and maintain a separate individual existence. Of the first kind are false membranes, scirrhi, the different sarcomata, encephaloid and fungus hæmatodes. The other comprehends all the entozoa. The tissues in which these morbid productions are developed may present a natural healthy state, a state of active hyperæmia, a modification of the consistence of their molecules, a modification of their number, (hypertrophy or atrophy,) or contain a purulent secretion surrounding the accidental production. Different theories are entertained of their causes; some consider them as the result of atony; others refer them to a state of stimulus or irritation in the part; and a third party attribute their formation simply to a perversion of the natural actions of nutrition and secretion. We are of opinion that whatever tends to modify the natural process of interstitial secretion, tends likewise to create an accidental production. It is only in this way that irritation operates as an exciting cause; not because it *increases* the activity of the nutrition or secretion, but because it *deranges* these organic functions. There are in every individual certain peculiarities of constitution, which lay the foundation of the different temperaments, and which, by imparting a peculiar character to the innervation, hæmatisation, and all the different functions of nutrition and secretion, are the real and essential cause of the morbid productions under consideration. These peculiarities may be independent of the primitive organization, and may have been acquired from the influence of external agents. Thus, living in a cold, damp atmosphere, excluded from the sun's rays, produces such a modification in the general state of the system, that a disposition to the secretion of tubercles is formed in every organ. Thus, likewise, the same atmosphere causes an abundant development of entozoary animals in the alimentary canal, and in other parts of the body. We shall treat of these different productions in the order they have been mentioned.

Pus.—Several varieties of this secretion have been established, founded on physical alteration of properties. 1. Creamy homogeneous pus. 2. Curdy pus. 3. Serous pus. 4. Glairy muciform pus. 5. Concrete or lardaceous pus. These different kinds, so various in appearance, are found, when examined with a microscope, to be composed of globules floating in a serous fluid, which coagulate by heat, acids, or the muriate of ammonia. M. Gendrin considers the globules of pus to be similar to the globules of the blood, only larger, deprived of the colouring matter, and rendered of an opaque yellow

colour; which differences depend on the transformation the globules of the blood undergo in their conversion into pus. He endeavours to prove, by a number of experiments, that pus is nothing more than blood in a peculiar state of alteration, and that the globules of the blood escape from the capillaries in the state of pus, in consequence of some modification they are subjected to during the stagnation which the blood undergoes in certain degrees of active hyperæmia. The remarkable fluidity of pus from scrofulous ulcers he attributes to the excessive quantity of soda, and of the muriate of soda, which such pus contains. Pus has been found to contain a substance resembling the caseum of milk, which, if verified, might afford some explanation of the peculiar tendency of puerperal women to suppuration. Now, that it is well established that it does not require a breach of texture for the formation of pus, the knowledge of chemical reagents to detect its presence have very much lost their value, and we shall not, therefore, dwell upon them here. Pus has been found in every tissue in the body, in the blood itself, even where no suppurating point could be detected in the system, and also in the lymphatic vessels. Sometimes it exists infiltrated in the texture, in others, collected into an abscess, and often without any peculiar lesion which can be regarded as the cause of the purulent secretion.

Tubercle.—This term is employed to distinguish a yellowish-white body of rounded form, extremely variable in size, first hard and friable, but afterwards transformed into a soft heterogenous matter, composed of whitish, curdy masses suspended in a sero-purulent fluid. When the tuberculous matter is softened and evacuated, it leaves behind it an ulcerous cavity, which sometimes extends in every direction; in others, remains stationary for an indefinite time; and in others again, even cicatrizes. The origin of tubercles are not, as BARON and DUPUY maintain, necessarily vesicular; neither are they, in the first instance, grayish, semi-transparent granules, as Laennec supposes, or even minute deposits of pus afterwards concreting, as has been thought by Cruveilhier, though this last opinion is not without plausibility, for it is probable, that at the moment of deposition the tubercle is in a fluid state; but for the present we shall take it for granted, that in the first stage, tubercle is an opaque, friable, rounded body, of a yellowish-white colour, without organization. Whenever the secretion of tubercle has commenced, that process continues; each particle of living matter, instead of the perspiratory fluid usually separated from the blood, takes from it a particle of tuberculous matter by which the mass is increased. All tuberculous matter then, is in this manner infiltrated among the tissues of the part. Af-

ter continuing in this crude state for an indefinite time, it is susceptible of transformation into purulent or cretaceous matter. The purulent transformation of tubercle is what has been termed its period of softening. This process consists in the tubercle acting on the tissues with which it is in contact like a foreign body, and causing a purulent secretion, which, mingling mechanically with the tubercle, separates its particles, and reduces its consistence to a clotted, fluid state, in which state it is commonly discharged. Sometimes, however, the tubercle, instead of softening, acquires an unusual hardness, and becomes transformed into a gritty mass. This arises from the reabsorption of the animal matter, leaving behind it the calcareous deposit. As tubercle is produced by the perspiratory secretion, of which it appears to be a morbid alteration, it may be developed in every part of the body, but it is most usually secreted into the cellular tissue. It is, however, not unfrequently found in the lymphatic system, and in the mucous follicles. In adults they occur most frequently in the lungs, and next in frequency in the small intestines. In children they occur more frequently in other organs, without affecting the lungs, than in adults. They are very rare till the age of four and five years, when they produce greater mortality than at any other period. After this period is passed over, they become less frequent till after puberty, when they become very common, especially in the lungs, intestines, and lymphatic system, and continue so till about the age of forty. The predisposing causes of tubercle are still far from being well known. There is an especial tendency to their formation in individuals of very fair skin, with bright red cheeks, strongly contrasted with the blanched appearance of the rest of the countenance, blue eyes, light thin hair, and a soft, slender, muscular system, showing little contractile power; in whom the blood is serous, deficient in fibrin and colouring matter, and the mucous secretions predominate. Such individuals are very liable to sanguineous congestions, succeeded by chronic ulcerations and various disorganizations. They also preserve in adult age many of the characters belonging to childhood, for their organization is in a manner arrested. Such a constitution may likewise be acquired by external causes, as by living in an impure, moist, ill-ventilated atmosphere, excluded from the rays of the sun, and by being fed on unwholesome, scanty food, that does not sufficiently repair the forces of the system, or by excesses, which waste it, and debilitate the nervous energy. In short, the tubercular diathesis is induced by whatever hinders the proper development of the system, and irritation alone will not account for the production of the disease. We must, therefore, for the present,

be content to consider tubercle as the result of a modification or perversion of secretion, often attended or preceded by active sanguineous congestion.

Colloid Matter.—This morbid secretion resembles glue, honey, or jelly, is of various colour without any trace of organization, and appears to be separated from the blood and deposited into the different organic textures. Sometimes it is infiltrated into them; in others collected into a mass, and in one case it was found poured out into the pleuræ without any other investment. The cellular tissue in which it is infiltrated may be indurated, hypertrophied or otherwise altered.

Fatty Matter.—This may be of two kinds, either natural fat or altered in its physical and chemical characters.

Saline Substances.—It often happens that under the influence of causes, which are still far from being well known, various saline substances are formed or deposited in super-abundant quantities in different parts of the body. There is not a single part of the system where such saline concretions have not been discovered.

Colouring Matters.—The formation of colouring matter in the tissues is one of the most general phenomena presented in the organic kingdom. The white variety of the human race is that in which it least abounds, but it not unfrequently occurs as a morbid secretion and exhibits various characters. There are however only two species, the black and the yellow, melanosis and cirronosis which claim consideration.

Melanosis.—This name has been given to an accidental production whose distinguishing character is a black colour more or less intense. It may exist in four forms. 1. In masses, encysted or otherwise. 2. Infiltrated in different tissues like tubercle. 3. Spread out in layers on membranous organs. 4. In the fluid state, either pure, or mixed with other fluids. There is no trace of organization in melanic masses, neither are they often encysted, but they vary very much both in form and size. According to Laennec, who considered them to be organized, after a time they soften like tubercle and are eliminated; but this process has been very rarely observed, and may even be questioned, further than as it occurs in the tissue mixed in and surrounding these masses. Infiltrated melanosis with induration of the tissue is that form of the disease which Bayle has considered as a species of phthisis, but we are inclined to view the induration as the result of chronic inflammation, and the deposition of the black matter into it an adventitious occurrence, not giving any peculiar character to the disease: thus in other instances the induration may be accompanied with all possible colours, red, bright gray, deep gray, or slate colour. Mela-

nosis in layers is most apt to occur on the free surface of the serous membranes; sometimes on their adherent surface, and also upon and under mucous membranes. The fluid form has been found in the stomach, secreted by its mucous membrane; also in the peritoneal cavity in chronic peritonitis; in one case in the urine, and in a fibrous cyst in the kidney of a horse. Chemical analysis has shown that this matter is composed chiefly of highly carbonized matter with albumen, fibrine, and other materials usually found in the blood. There is scarcely a tissue in which this accidental production has not been found, but it is much more common in some parts than in others, as in the lungs and lymphatic system. It has never however been found in the brain, though this organ naturally contains black matter in certain parts. It often tinges scirrhus and encephaloid tissues in the liver, stomach, breasts and testicles; has also been found to exist in minute portions in small arterial and venous vessels, and in one case to flow like ink from a cancer of the breast. Laennec has endeavoured to draw a line of distinction between this matter and the black pulmonary matter so common in old people, but in our opinion without any just foundation. All ages are liable to this formation, but it occurs most frequently in old age, as if the disposition to the formation of tubercles so prevalent in youth were replaced by the disposition of the secretion of melanic matter. Its frequent occurrence seems also to coincide with that period when the pilous system becomes deprived of its colouring matter. The symptoms to which this affection gives rise have nothing peculiar about them. They depend on chronic irritation which often accompanies them; on the simultaneous existence of other accidental productions, or on the uneasiness which these masses may occasion mechanically, by compressing other parts.

Cirronosis.—This affection has been particularly noticed by Lobstein, in the foetal state, and differs only in situation from the *icterus neonatorum* of authors.

Morbid secretions susceptible of organization.—*Organizable matter of the serous surfaces*.—The numerous varieties of form which this substance presents have been long known by the name of *false membranes*. They are composed of concrescible fibrine and an albuminous fluid contained in cells. It has been a question whether their vascularity was derived from the adjacent membrane, or existed independent of it. We are of opinion both theories are correct: for they will be found to contain vessels communicating with the adhering part, and also blood not contained in vessels, and which vessels do not communicate with the surrounding tissues. There are three states through which these substances pass. In the first they exist as coagulable

amorphous masses without trace of organization; in the second they become organized and vascular; and in the third they possess all the properties of cellular tissue or serous membrane, are obnoxious to various morbid derangements, as hyperæmia, the exhalation of blood, secretion of pus, tubercle, &c. and may be transformed into fibrous, cartilaginous or osseous tissue.

Organizable matter of the tegumentary surfaces.—A substance capable of coagulating spontaneously, is sometimes deposited on the free surfaces of the mucous and cutaneous membranes. Sometimes it extends in a membraniform layer, over a portion of mucous membrane in a state of irritation, and in others closely unites the opposite surfaces of membranes accidentally in contact. It has been doubted whether they ever become vascular, but M. GUERSENT has traced vessels in the false membranes of croup, anastomosing with the mucous membrane beneath. They often become detached by the secretion of a fluid, by the mucous membrane under them.

Organizable matter of the vascular system.—Whenever the circulation ceases in a vessel, the internal surface of that vessel tends to become the seat of an exhalation, producing that same organizable matter—of which we have already followed the formation on the serous—mucous—and cutaneous surfaces—and obliterates its cavity.

Organizable matter of accidental surfaces.—When any tissue has suffered a solution of continuity from both surfaces of the wound, it exhales a matter which, like those just examined, becomes solid, organized, and vascular, and is thus converted into a genuine tissue.

Organizable matter deposited in the tissues of various parts of the body.—These productions, infinitely varied in their physical appearance, are all either organized, or have a tendency to become so. Some of them are homogeneous in their texture, resembling coagulated fibrine, or possess the hardness of fibrous or cartilaginous matter, or merely the consistence of cerebral pulp. Others again are of heterogeneous composition and texture, consisting of different component particles, with structures, filamentous, areolar, lobular, or cellular, containing fluid matters. In some cases the organizable morbid production consists of a reddish, flesh-like tumour, traversed by numerous vessels: this is the *vascular sarcoma* of Abernethy. If some contain cells, with exceedingly vascular parietes, and filled with a serous fluid: this is his *cystic sarcoma*. When it presents a granulated appearance, he calls it *pancreatic sarcoma*. When it appears as a grayish or whitish substance, without trace of vessels or of blood, and often divided into regular lobules by something like fibrous in-

tersections, of sufficient hardness to grate under the knife, it is called *scirrhus*, so that scirrhus may be of two kinds, either a simple alteration of nutrition of the cellular tissue, or a morbid secretion. When the production resembles cerebral pulp, just as it begins to soften, containing either vessels or blood alone, it is called *encephaloid matter*, or *medullary sarcoma*. Different alterations and productions have received the name of *fungous hæmatodes*. Sometimes it is accidental erectile tissue, in other cases vascular sarcoma, medullary sarcoma, &c. *Cancer*, in the author's opinion, is not a distinct morbid alteration, but the name is applied to every lesion, whether of nutrition or secretion, that has reached the period when it terminates in an ulcer, constantly extending its ravages either in depth or surface.

Entozoa.—This term is applied to animals generated within the body, which possess a separate individual existence. Those introduced from without, are called *ectozoa*. The entozoa have distinct habitations; some of them reside in cavities, others in the parenchyma of organs; the *ascaris lumbricoides* are found only in the intestinal canal, the *strongylus* chiefly in the urinary passages, the *fasciola hepatica* in the liver, the *filaria* in the cellular tissue. They exhibit three principal varieties of form; 1, cylindrical; 2, riband-shape; 3, vesicular. Their organization is very variable; some consist merely of a parenchymatous mass, without distinct cavity, or very perceptible organs, others resemble a bladder filled with water, whilst others again show a more complicated organization, possessing a muscular system, an alimentary canal, organs of generation, and rudiments of a circulatory and nervous system. CUVIER divides them into two classes, the *cavitaria*, which possess a digestive tube, and the *parenchymatosa*, which are destitute of this organ. The former comprise the *filaria*, *ascaris*, *strongylus*, *trichocephalus*, and the *oxyuris*; the latter the *acanthocephala*, *trematoda*, *cestoidea*, and *cystica*. In this place we shall treat only of the cystica, the hydatids of authors. They occur in almost every part of the body, in the parenchyma of organs, in mucous, serous, or vascular cavities, and in the free cellular tissue. One class of them consists of a simple bladder, filled with a clear fluid, without appendix of any sort, denominated *acephulocyst*. The other class, the cephalocyst, may have one or more heads, or a simple retractile appendix, the *cysticercus* of Laennec. They may arise as the other productions we have spoken of, from irritation, which deranges the natural mode of nutrition and secretion, and thus act as an accidental agent. It is remarkable, that the entozoa have a peculiar tendency to be developed and to increase

when the external agents are such as to prevent the complete development of the process of nutrition in the different tissues. As if the organic particles thus prevented from perfect assimilation, proceed to derange themselves so as to produce an inferior being, an entozoon. In fact, they occur most frequently in moist countries, and from the use of poor watery diet. They may be produced almost at will in animals, by keeping them in damp, confined habitations, excluded from the sun. There is, however, one species, the *dracunculus*, which forms an exception to the rest, being exclusively confined to dry and torrid countries.

Gaseous secretions.—The system in the healthy state constantly exhales gases from the cutaneous surface, the alimentary canal, and the lungs, and it is probable that in many diseases, these secretions are greatly modified. It has been thought that gravel, or the excessive formation of uric acid, is often caused in cold and moist climates by the diminished exhalation of azotic gas from the lungs. The gaseous secretion may present alteration, either in the quantity or quality of the gas exhaled, or they may occur in certain parts that do not naturally secrete any such. The consideration of each kind falls under notice in the special pathology.

Lesions of the Blood.—The alterations of the fluids should be studied, 1, in the blood; and 2, in the different humours which concur in forming the blood, or which emanate from it. The qualities of the lymph and chyle especially exert a direct influence on the state of the blood; but a modification of the other humours also tends to alter its qualities as they draw their constituent principles from it. The blood while circulating seems to be under the influence of two forces; one imparts intestine motion to each of its globules, and maintains them at a certain distance from each other, while the other tends to bring the blood to a state of repose, and is exerted in the organic parenchyma, at the point of contact of the solids and the blood. If we analyze the blood and the solids, we discover the same proximate principles in both. If we examine their physical structure, we find it identical, both consisting of globules mixed with an amorphous substance. No line of demarcation can therefore be drawn with strictness and precision between the blood and the solids with respect to their vital phenomena, internal structure and chemical composition. Physiologically speaking, we cannot conceive one to be affected without the other. On the one hand, the blood nourishes the solids and maintains their life, and on the other the solids contribute to *make* the blood in the actions of absorption, digestion, arterial circulation, and respiration, and to *unmake* it in the action of venous circulation,

secretion, and nutrition.* Analysis has shown the blood to be chiefly composed of fibrine, albumen, and a peculiar animal matter to which it owes its colour. When drawn from a healthy person, it separates into a solid portion—fibrine and colouring matter, and into a fluid portion consisting of albumen and water; but in many morbid states it exhibits different appearances which constitute so many pathological conditions. The fibrine may be altered either in quality or quantity. When the fibrine abounds, the clot is large, leaving very little serum, and is also dense, affording little albumen on pressure, but in some instances the clot is large, from the quantity of serum it contains, and might thus be thought to exhibit a superabundance of fibrine, did we not press it and force out the serum. Impoverished blood, on the contrary, contains an undue quantity of serum and a small soft coagulum; and here again we are liable to error, for the smallness of the coagulum may be only apparent, and arise from the firmness with which it has coagulated. The force that maintains the blood in its fluid state may be so modified to allow it to coagulate spontaneously in its vessels. Sometimes it takes place without any known cause, and in others seems to accompany a state of irritation in the parietes of the containing vessel. These polypous concretions often display marks of vitality. An opposite state of the blood, when it loses its power of coagulation altogether or coagulates very feebly, has often been met with, and can be traced to various causes, as the introduction into the circulation of various poisons, viper virus, miasmatic exhalations, &c. It may also arise from electricity, running down animals; and from the debilitating effects of disease, diet, &c. Another remarkable alteration the blood exhibits, is the formation of a whitish or yellowish layer on its coagulum, which has been found to contain an undue quantity of albumen, and to bear some analogy to false membranes. This bulky appearance of the blood occurs in certain inflammatory diseases, during the state of pregnancy, and under some circumstances not appreciable. The albumen is commonly increased to twice its natural quantity in an inflammatory condition of the system, rendering the serum quite viscid, and nearly all of it convertible into a firm mass on the application of heat. The mucous layer that has sometimes been observed at the bottom of the serum or suspended in

* It is thus rendered both in the original and the translation, and we are not quite certain that we apprehend the precise scope of the context. We should think it would be more correct to range the arterial circulation in that category of functions which is concerned, to use the author's own expression, in *unmaking* the blood and composing the solids; and the reverse of the venous circulation.—REV.

it like a clond is doubtless altered albumen, but its cause is not well understood. In two cases of this sort there was extensive collections of pus in the system. That the blood is often equally altered and vitiated in disease, is proved by a number of experiments and well-attested observations. The blood taken from a person labouring under putrid fever, and introduced into the system of an animal, has induced violent symptoms, gangrene, and death. The same has occurred from using the blood of a small-pox patient, or the blood of animals affected with malignant pustule or carbuncle. It also becomes surprisingly altered, and rendered unfit to maintain the system in a healthy state, as in scurvy; from the long-continued use of certain mineral poisons, as mercury, and in persons who have been constrained to support existence by resorting to insufficient unwholesome nutriment which impoverishes the blood, renders it little more than serum, and gives rise to dropsical effusions. The mutual influence which the blood and nervous system exert over each other, is little understood; still in the capillary system where the blood comes in contact with the solids, and where, in conjunction with the nerves, it gives life to the organs it traverses, the whole are linked in mutual dependence, and the nerves must act on the blood as the blood acts on the nerves. Dupuytren proved long ago that cutting the pneumo-gastric nerves prevents the venous blood from being converted into arterial in the lungs; and Mayer says that by tying them in animals, the blood in the pulmonary system coagulated. The many diseases that are connected with and arise from a morbid state of the blood, form an interesting subject of inquiry, and claim our serious consideration; still in the present state of our knowledge, we must be cautious that we do not confer on what may be as yet only hypothetical, the force and importance of well-established facts.

Lesions of Innervation.—In every disease not immediately produced by external violence, the symptoms that occur depend on a lesion of the forces that animate every living part, (innervation,) or on a lesion of organization. The former is primary and constant; the latter is secondary, variable in its nature, and inconstant in its existence. How often do we observe various disorders of the digestion, circulation, respiration and secretions, without being able to discover by dissection the least derangement in the organs that execute these functions? Still more frequently the examination of the nervous centres will not reveal to us the cause of the different disorders of animal life. There are certain morbid states in which the physical laws tend to resume their empire before the extinction of life, and this diminution of resistance to the affinities of inorganic matter gives rise to a

train of phenomena commonly called *putrid symptoms*. Perhaps we shall be able, at some future period, to explain by lesions of organization those remarkable phenomena, but until then let us consider them as the external manifestation of a lesion of the vital powers themselves, and let us call them *lesions of innervation*. The existence of general derangement caused by sympathetic action, may be referred to either an excitation of the vital forces, their reduction below the regular standard, or to their perversion. Hence the production of three fundamental dispositions, the *hyper-adyynamic*, the *ady-namic*, and the *ataxic*, which impress on disease their peculiar character and regulate its course. To determine the predominance of one or the other of these dispositions, to estimate their influence and ascertain the mode of treatment they require, is the province of the physician; but it is sufficient for us to have pointed out the path to be pursued; to treat of these subjects would be to quit altogether the domain of pathological anatomy.

We have little space left for remark of any sort, but there is one point we cannot pass by unnoticed. The prominent, we might perhaps say, the only glaring fault of the work, is the reluctance of the author to admit the paramount agency of irritation in the production of disease. He even refuses to treat of inflammation as a separate morbid condition, and endeavours to supply its place by the exclusive consideration of its elements, as hyperæmia, morbid secretion, &c. which he gives as original independent conditions, without attempting to trace them to any adequate cause, at least in very many cases. He can perceive only hyperæmia, where others can demonstrate irritation and even active inflammation, thus entirely overlooking the first and all-pervading attribute of living matter to enter into action on the application of stimuli, and to cause a fluxion of the circulating fluids to a part irritated. Whenever the irritation is not plainly demonstrable in its causes or effects, that is, either in the ascertained presence of a stimulus, or in the evident appreciable results of inflammatory action, he stigmatizes the doctrine as applied to all such cases as hypothetical, although he himself has recourse to an explanation which he confesses to be in many instances equally hypothetical. This hyperæmia, this new element of a morbid condition, as it is considered by Andral, if it be not referred to irritation as its cause, must arise either from a mechanical impediment to the circulation, a local debility in the part affected, or from an impoverishment of the blood; neither of which causes can be thought to be present in very many cases. Seeing these to be insufficient and often not present, how is the occurrence to be accounted for if it be not re-

ferred to irritation? Andral, throughout the work, constantly endeavours to elude the question, and to explain away a doctrine he cannot refute by sufficient facts and arguments, by such expressions as the following. "Irritation can only be considered as one of the elementary principles of the phenomenon." p. 10. "Irritation gives the impulse to the aberration of nutrition, but does not produce it." p. 282. "The only effect which can rationally be attributed to irritation, is the tendency to deviation from the natural type which it produced in the function of nutrition." p. 336. "That irritation may be the exciting cause of every species of alteration, both of nutrition and secretion; but that, of itself, it is incapable of producing any one of them." p. 411. &c. Although we are ourselves firm believers in the doctrine of irritation as taught by the physiological school of medicine, we do not much complain of this backwardness of Andral to admit its principles and precepts. His wary and sagacious mind is admirably calculated to clear up the obscurities that have so long involved pathological science, and however the scruples of himself and other eminent cultivators of pathological anatomy may somewhat retard the general adoption of a system of medicine founded on physiological data, their researches are preparing the way in the best possible manner for the final triumph of these doctrines.

Here we close the general anatomy, and conclude the first volume, which is complete within itself, and the most susceptible of analysis. If circumstances permit we may take up the second volume in the succeeding number. In the mean time we will barely remark, that the translators deserve the thanks of the profession for the very able manner in which they have executed their task; and we hope that the work may be republished in this country, that all classes of the profession may be enabled to become familiar with its pages.

C. D.

New York, January, 1832.

ART. X. *The Library of Practical Medicine; published by order of the Massachusetts Medical Society for the use of its Fellows.* Vol. I. Containing a Treatise on Fever. By SOUTHWOOD SMITH, M. D.; and Clinical Illustrations of Fever. By A. TWEEDIE, M. D. Simpson and Clapp. Boston, 1831.

WE have on a former occasion given some account of the history, and of the institution of the Massachusetts Medical Society. We

described the objects of the society as twofold, combining in its operations the diffusion of knowledge by its annual and occasional publications, and the improvement of the police of the profession, by regulating the standard of medical education, and by promoting mutual confidence and harmony among its members; at the same time that its respectability and usefulness are increased by the distinction which it has created and maintained between educated and irregular practitioners. These last objects may now be regarded as accomplished to a degree nearly as great perhaps as the imperfection of all human institutions will allow. The society embraces a very large proportion, and is in a fair way speedily to embrace all the respectable practitioners of medicine in the state. The only limitation that formerly existed, that which required licentiates to continue in practice three years before they could be admitted fellows of the society, is done away by a recent modification of the charter, and all are now admissible as soon after they receive their license or diploma as they choose to make application. The line of demarcation too between the acknowledged physicians and the uneducated pretender, is so strongly drawn that almost no man in the community can mistake or confound them. There are those still who prefer empirics to educated physicians; but they prefer them as empirics, and employ them as such.

The plan of publication has also been changed since our former notice of the society, and it is this circumstance which has become the occasion of our again recurring to its proceedings at this time. Formerly the publications of the society were "few and far between;" for several years past they have been more frequent, a part of a volume being regularly published every year; and they are on the whole more valuable. These improvements are in consequence of the adoption of the plan, pursued by many of our public journals, of giving a premium for communications. This plan did not, however, fully answer the purposes contemplated by those who proposed it to the society. It should seem that the great body of the profession are every where little disposed to write for the press. And in regard to most of them, if they occasionally conquer this aversion, it is generally only to communicate a case or two, without any original deductions, either of theory or practice. This, as it is the easiest and most indolent, so it is the least useful mode of filling up the pages of a medical work. Series of cases, brought together and compared, so as to illustrate any important subject, whether of theoretical speculation, or of practical inquiry, are among the most valuable publications. It is those collections of detached cases, taken almost at ran-

dom from the practitioner's note-book, with little or no apparent object, but to fill out a communication, or to obtain its reward, and which, in spite of all the care of the most efficient editor, will still occupy a pretty large space in even our best medical journals, that we estimate at so low a rate.

It was another obstacle to the full success of the annual publication of the Massachusetts Medical Society, that a committee of a society can never exercise very rigidly the right of selection from the papers presented to it, and the duty of rejecting such as are of less value. Other considerations besides those which respect the merits of the several articles, unavoidably interfere with the freedom of their decisions. This difficulty is often sufficiently embarrassing to editors of other periodical works: but it is altogether impossible for a committee to act independently of such considerations, in regard to the communications of the members of the society, of which they are but the agents.

Instead, therefore, of continuing its efforts to enlarge its original publications, the Massachusetts Medical Society resolved to republish annually a volume on some subject of practical usefulness to the profession, to which they have given the title of *The Library of Practical Medicine*. This volume is distributed gratuitously to all the fellows of the society who are punctual in paying their assessments, and also to those who have honourably retired from the active duties of the society, and are exempted from assessment. By this means the individual members of the society receive for the small assessment which they are required to pay, a full equivalent, in pecuniary value, besides all the advantages and privileges to which the fellowship of the society entitles them. A still greater benefit is conferred upon the profession as a body, by the diffusion of useful works among its members. Many of them have little intercourse with their professional brethren, and little opportunity of consulting new books, or of keeping up a knowledge of the improvements in modern practice. But when a book is thus brought home to their notice, recommended as it is by being selected for such a purpose, by a committee in whom the society have confidence, and presented to them, without cost to themselves, they will not fail to read it; and the selection must be very unfortunate if good is not done by it.

The only objection that has been made to the plan is the complaint of some booksellers of its interfering with their sales. But to this objection there is a sufficient answer. In the first place, the society gives employment to the craft in the publication of their volume, and of course on terms which afford to the printers an adequate profit:

for they have neither the desire nor the means to deprive them of it. The most that the objection can amount to, therefore, is that the society, taking five hundred copies at a purchase, obtain them at a wholesale price instead of giving to the booksellers a retail profit. Were it true, therefore, that the retail sales of the booksellers were somewhat diminished and their gains consequently in some degree reduced, by this gratuitous distribution to its own members, it could not be regarded as an act of unjust interference, since a great general good is accomplished by it, and by means which afford a full remuneration to the publishers. And the society has scrupulously abstained from every thing like an interference with the retail trade except so far as the supply of a single copy to its own members.

It is far from being true, however, that this measure has any tendency to diminish the sales of medical books. On the contrary, it will necessarily increase such sales. A single volume a year will do but little to supply the wants of a truly reading man; but it may do much to excite or renovate a reading spirit in a man in whom the disposition to read has been long dormant. Hence it is one of the greatest benefits to the profession, of the gratuitous distribution of a volume annually, that the spirit of inquiry which it will excite, will stimulate its members to procure and read other books, as well as to derive knowledge from the volume distributed; and this will react in an increased demand from the bookseller. That such will be the result is not a matter of opinion merely; although the inferences upon which the opinion might be founded, are drawn from such well-established principles of human nature, that there is little room for doubt in regard to their correctness, were there no other ground for them to rest upon. But the experiment has been tried on a large scale, with the book which has been much more freely distributed than any other. In the extensive distributions of the Bible it has been found that the increase of sales has always kept place with the extent of the donations. If this is true where only one book is concerned, and the fact rests upon official authority, it must be so to a much greater extent, where the whole effect of an increased desire for books which an increase of reading will create is taken into the account.

The first volume of this Library of Practical Medicine presents strong claims to the interest of the profession, both from the nature of the subject treated of, in the two works included in it, and from the character and opportunities for observation of the several authors. Fever is always a severe, and often a dangerous disease; and a disease of such general prevalence, that in some or other of its forms it must come under the notice and treatment of every practitioner of medicine.

More than this, it in some way combines with, and produces modifications of, most other diseases; so that a knowledge of the true character and proper treatment of this disease is indispensable to a right knowledge of the character and treatment of every other.

The volume before us contains two treatises on this important disease. *A Treatise on Fever*, by Southwood Smith, M. D. and *Clinical Illustrations of Fever*, by Alexander Tweedie, M. D. One can hardly conceive a situation more favourable to an accurate observation of all the phenomena of disease than was enjoyed by both these gentlemen, for the observations upon which these treatises are founded. They were colleague physicians to the London Fever Hospital, an institution conducted with great liberality. The number of patients is sufficiently large to furnish every variety of case which the character of the disease, and of the epidemic constitution, and the condition of the population, would be likely to produce, with an extensive experience in each, and at the same time such liberal provision is made of professional and other assistance as to admit of a particular and satisfactory attention to each case, and a full record of its phenomena. Both physicians visit the hospital daily, and the patients as they are admitted are assigned alternately to each physician. Yet both seem to have had a sort of community of interest in all the patients. There is great similarity in the practice recommended by each, and both appear to have made use of the cases indiscriminately in preparing their several publications.

It is a little curious, that although the two treatises were published nearly simultaneously, and of course the observations upon which they are founded, must have been made at the same time, yet neither of them takes any notice, either of the practice or the publication, of his colleague. The subordinate medical officers are mentioned with approbation, but without any allusion by either to the other principal. The plan and objects of the two works are so different, that neither of them can be regarded as interfering essentially with the other. One is an elaborate treatise on the history, character, and treatment of fever generally; the other is a clinical report of all the fatal cases which occurred in the hospital, in a single year, with some concise remarks upon the character and treatment. While each author is pursuing thus his own way, a considerable number of the individual cases are reported a second time. This circumstance would at first view seem to constitute an objection to bringing the two works together into one volume, as presenting a useless redundancy; but on a closer examination it proves to be a decided advantage. The cases as reported in this volume are not mere copies from the house physicians

diary, but are written out by the authors themselves, each selecting the most prominent features of the case as they were presented to his own mind. Hence, in the same case there is always a considerable diversity in the phraseology, as it is reported by each author, and not unfrequently, additional particulars by one which are passed over by the other. A comparison of the two reports of the same cases, enables us also to estimate the faithfulness and accuracy of both, and especially to see how far the powers of observation of the author are influenced by the theories he has adopted. We have thus a check upon the authors' imagination, such as is not often put into our hands. How far we shall have occasion to use it will appear, as we proceed. In the present volume the facility of comparing the cases in the two works, is increased by notes of reference from one to the other.

The treatise of Dr. Smith, as we have said, is by far the most elaborate of the two works, although it sometimes bears marks of some haste in the composition. It aims at nothing less than a complete history of fever, with an entire explanation of all the phenomena, by a new history of the disease, which is expected, or at least designed, to supersede all former theories on the subject. And this too not of fever as exhibited in one place, at a particular period of time; but of fever as a universal disease, as it prevails in every part of the world and in all its different periods.

After remarking upon the imperfect state of our knowledge of fever, and the consequent demand for further observations and inquiries, and stating concisely the objects proposed in his treatise, the author gives the following account of the opportunities and facilities which he enjoyed for the investigation of the subject.

"The London Fever Hospital is capable of receiving sixty-two patients; in most seasons of the year, its wards are full; often there are numerous applications for admission which cannot be received for want of room; there pass through the wards from six to seven hundred patients annually.

"Two physicians are attached to the institution, under whose care the patients are placed alternately in the order in which they are admitted; there is one assistant physician, whose duty it is to perform the office of the ordinary physicians when either of these may be incapable of attending, and there is, besides, a medical officer resident in the house. A history of each case, containing an account of the age, occupation and residence of the patient, together with as full a statement of the symptoms of the disease and of the order of their succession as can be obtained, is entered in the journal by the resident medical officer. Each of the ordinary physicians attends daily and enters in his journal a daily report of each of his own cases. The resident medical officer goes round the wards twice a day, namely, early in the morning and late in the evening, to observe if any change requiring attention may have taken place in any patient; and if any such change be observed by the nurses during the interval between

these visits, they are reported to him by the head nurse without delay; all such events, with the modification of treatment they may have required are entered in the journals. Every case that terminates fatally is examined after death, and an account of the morbid appearances is entered in a book kept for the purpose. In this manner, in the progress of years a mass of facts accumulates relating to the statistics, the types, the symptoms, the causes, the diagnosis, the pathology, and the treatment of the disease, whether successful or unsuccessful, which both on account of the fulness and accuracy of the record and of the extent of the period it embraces, cannot but be of great value." pp. 3, 4.

All this is very well and quite satisfactory, so far as the disease which is the immediate subject of investigation is concerned. But why we are to take it for granted that every other fever is like this—why we are required to receive the poorer inhabitants of a large and crowded city in a particular year, or series of years, as representatives in respect to the character of their diseases, of all the inhabitants of the whole globe, in all their variations of rank, and condition, and habits, and climate, and in successive periods of time, we are nowhere told. This is the great mistake of most, or all the systematic writers on fever. They assume the *unity* of the disease, and take it for granted that the particular form of it which may have come under their own observation gives a fair representation of the whole. We do not here overlook the fact that Dr. Smith in a single page speaks of fever as a genus consisting of several species and varieties. But this is merely an introductory remark and appears to be immediately forgotten, for he at once relapses into regarding the phenomena of the fever of the London Fever Hospital, as exhibiting the true character of fever generally, as a single disease, and this mode of regarding it extends through his whole work.

Yet every physician in general practice must have observed variations in the character of fevers at different times; especially if his observation have extended to different climates, which cannot thus be reduced to a uniform standard. The celebrated Dr. BAILLIE, after more than thirty years practice in the same good city of London, says that after he had ceased to be a physician to St. George's Hospital, and more especially since his patients had been chiefly in the upper ranks of society, he had seen not more than three or four cases in a twelve-month of such fevers, as he had seen many of during the thirteen years that he was hospital physician.

SYDENHAM's doctrine of epidemic constitutions of the air has, undoubtedly, been carried to a great extreme, and been productive of great evils in practice. Physicians, instead of investigating the phenomena and character of individual cases of disease, have often sought out, or taken upon trust, an opinion in regard to the general consti-

tution of the diseases of the time, and the course of remedies adapted to it, and have been content to prescribe in the gross, with little attention to the peculiar features of each case. We have seen a respectable and experienced physician so confident in an opinion thus formed of the nature of a disease, as to be unwilling to countenance a younger neighbour, with whom he was in consultation, in an effort to obtain permission for a *post mortem* examination, regarding the investigation as unnecessary and useless, where the epidemic constitution was so well known. It not unfrequently happens too, when a man has gone thus far in giving himself up to his theories, that he does not stop even here; but having found all diseases for a time to be of a similar character, and to be cured by similar means, he next finds that all diseases are cured only by remedies of a particular class, while those of a different character only increase their severity and fatality. Or perhaps it would be more correct to say, that having abandoned the habit of observation, in reliance upon his belief of the universal influence of the supposed constitution of diseases, he does not watch closely enough to perceive it, if that constitution itself should change to one of a very different, perhaps an opposite character.

It appears to be in this manner, that most of the party feeling is formed among physicians in regard to modes of practice, and which in some parts of our country has proceeded to divisions and recriminations, by no means honourable to the profession. It is curious to observe too, that the extreme to which these men have arrived is, in its practical results at least, directly the opposite of that with which they began, and nearly the same with that which they at first vehemently opposed; and to which many of them think themselves still opposed. There are, in fact, two extremes in this, as well as in every other case; and here, as elsewhere, the advocates of each are more nearly in approximation than either are aware of.

The disposition to *generalization*, which forms so prominent a feature in the whole human character, is nowhere more extensively exhibited than in medical theories. Within proper limits it is, indeed, necessary in the cultivation of this as well as of every other science. But in reducing science to practice, it may well be doubted, whether it is not uniformly hurtful in its tendency. If the physician were compelled to investigate each case of disease by itself individually, without any reference to its resemblance or relations to others, inquiring only what organ or function is deranged, and how, and estimating the effects of the particular derangement upon the general system; although he might often err in his estimate of the state of each organ, we should probably have less injurious practice than we

now have, in consequence of the classification and generalization of diseases.

The doctrine of the *unity* of fever has been a fruitful source of that sort of generalization in practice, which confounds the peculiarities of individual cases. How many a man has been bled and purged incontinently, because Dr. RUSK was successful in the epidemic of 1793, in the use of the lancet, and jalap and calomel; and that too, in diseases which have little affinity to that, except, perhaps, in some remote synonym. The same thing is equally true of other modes of practice. It matters little, whether the practice be stimulating or depleting, vomiting, purging, or sweating, exciting or anodyne, unless the remedies are rendered applicable by a knowledge of each individual case; all are bad—bad in principle, and bad in the results.

But although we are not ready to concede to the fever described in this treatise, all that is claimed for it as a representative of fevers in general, yet we are not disposed on that account to detract from the merit or value of the work itself. A good description of fever in any of its forms, which clearly exhibits the phenomena of the disease in connexion with the internal derangements which produce them, and which faithfully points out the results and the rationale of the practice adapted to it, will serve as a standard of comparison for other forms of the disease, to a degree scarcely less important than if all were really alike. The practitioner is not, indeed, enabled to prescribe upon the naked authority of his author, without some reflexion or thought of his own; but he has the means of applying the author's observations to the analogous phenomena of his own case.

Such a description of fever we have, in the view we take of it, in the work before us. It is intermingled, it is true, with theoretical speculations. But the descriptions are clear and vivid, and are supported and illustrated by an extensive series of examinations upon the dead body. If it be true, that the ardour of supporting a favourite theory has sometimes betrayed the author out of a perfect impartiality in regard to the character and selection of his observations, he is so obviously unconscious of any such deviation, that it takes little or nothing from our confidence in the general integrity and faithfulness of his descriptions. It is his manifest intention, by the extent and variety of the facts with which he presents us, to afford us the means of drawing from them our own conclusions; although it is often not less plainly to be seen, that he confidently expects that our conclusions will differ little from his own.

Our author prepares the way for the exhibition of his own theory

of fever, by the comparatively easy task of showing the incorrectness or insufficiency of previous theories. After giving a concise account of the doctrines of the best ancient, and several of the leading modern writers, he says—

“All the partial and imperfect views of fever, which have now been brought before the eye of the reader, originate in one or other of the following errors, obvious as they all are; either that of assuming as a fact what is merely a conjecture; or that of assigning to the genus what belongs only to the species; or that of characterizing the disease by what appertains only to a stage; or that of mistaking the effect for the cause. On careful examination, it will appear, that one or other of these errors, which are as serious as they are palpable, has vitiated, in a greater or less degree, every generalization of fever that has hitherto been attempted.

“Thus the believers in debility derive their notion of the whole disease from the phenomena which occur in the first and last stages only; in these, it is true, they may find abundant evidence of debility; but then they overlook the intermediate stage, in which there are generally the most unequivocal indications of increased sensibility in the nervous, and increased action in the vascular systems; in this manner they characterize the disease by what appertains only to certain stages of it. Again, when they contend that debility is not only the essence of fever in general, but is really characteristic of every type of it, they affirm what is indisputable of fevers in particular seasons, in particular climates, or in particular constitutions; but beyond this, their generalizations cannot be extended; in this manner they assign to the genus what belongs only to the species. And when Cullen goes on to affirm, that the proximate cause of all the morbid phenomena is a ‘spasm of the extreme vessels,’ he commits the additional and more palpable, but not less common error, of assigning as an undoubted fact, as a real and ascertained occurrence, what is only a conjecture, and for which there is not, and for which he does not even attempt to adduce the shadow of evidence.

“Precisely similar to this, is the error of those who, for the most part belong to the same school, and who attribute the essence of fever to a morbid condition of the blood. The blood may be diseased in fever, but if it be so, these writers do not know it, or at least they do not adduce any evidence that they are in possession of such knowledge; they do not appear so much as to have questioned chemistry; at all events, it is certain that they have hitherto received no satisfactory answer. There is no evidence on record, that the alleged determination of the blood takes place in every type and every degree of fever; and if there were, it would still be but one event among many, and one that occurs late in the series, and therefore could possibly be nothing more than an effect.

“In like manner, those who maintain that inflammation of the brain is the sole cause of fever, assume as an established and admitted fact, the universal and invariable existence of inflammation of the brain in this disease.

“Inflammation of the brain, without doubt, is demonstrable of many individual cases, and of some whole types; but beyond this, there is no proof that the generalization can be carried; the evidence indeed, in regard to many cases, is entirely against the assumption, and is as complete as negative evidence can

well be; consequently, it must be admitted, that even this hypothesis, in the present state of our knowledge, is founded on the error of assigning to the whole genus what belongs only to particular species; and it would be trifling with the reader to attempt to prove, that this is still more certainly and strikingly true with regard to inflammation of the mucous membrane of the stomach and intestines—an affection which in innumerable cases in which its existence is certain, clearly appears, on the slightest examination of the succession of events, to be an effect, and not a cause.” pp. 18, 19.

He then proceeds to the development of his own views of fever as follows:—

“The frequent and formidable disease, on the investigation of which we are entering, cannot be understood until clear and exact answers are obtained to the following inquiries. 1. What is the series of phenomena which constitutes fever? 2. What are the particular phenomena which are common to all its varieties and combinations? 3. What is the order in which these phenomena occur in the series? 4. What are the organs, and what their states, upon which these phenomena depend? 5. What are the external signs of these internal states, or what are the indications by which their existence may be known? 6. What is the external noxious agent or agents, or the exciting cause or causes, of the disease? 7. What is the particular remedy, or the particular combination of remedies, which is best adapted to each state of each organ? When these questions can be clearly and perfectly answered, and not till then, we shall know the disease and its treatment. In order to make any real progress in this knowledge, we must therefore prosecute these inquiries. It appears to me that we are already in possession of ascertained facts, adequate to answer, with a high degree of certainty, though perhaps not with absolute certainty, several of these questions. In keeping these inquiries steadily before our view in our investigation, there will be this great advantage, that it will enable us clearly to perceive what we really know, and what still remains to be ascertained.” p. 20.

“The first thing to be done then, is to ascertain the course of symptoms, and the second, to determine the order in which they occur; when these two points have been made out, what is essential, and what adventitious, as well as what is the cause, and what the effect, become at once clear and certain. But the difficulty lies in discerning amidst the infinite diversity and contrariety of symptoms which the different modifications of fever present, when we may safely assure ourselves that we are in possession of all the essential phenomena. Our guide is invariableness of concurrence. If we can ascertain that a certain number of events invariably take place in every form and every degree of fever, these events will give us the particular phenomena which are common to all the varieties of the disease. If we can further ascertain that these events invariably concur in a certain order, we shall have discovered what events bear to each other the relation of cause and effect. And the establishment of this relation of events, this constant connexion with each other, this uniform antecedence and sequence, appears to me to be the only theory after which it is consistent with the principles of sound philosophy to search. If I have endeavoured to establish this connexion, and have thus ventured, as I conceive in a

strictly philosophical sense, to propose a theory, in doing so, I have carefully restricted myself to the attempt to deduce a legitimate conclusion from facts previously ascertained. It does appear to me that these three points, namely, the common phenomena, the invariableness of their concurrence, and their mutual relation are satisfactorily established. Whether I shall be able to communicate this conviction to the reader, I do not know; but I hope he will at least coincide with me in opinion, that this mode of investigating the disease affords us the best chance of arriving at satisfactory results.

“Whatever be the phenomena of fever, they depend upon certain states of the organs. Whatever be the noxious agents, or the exciting causes of the disease, and however they operate, they can induce the disease only by bringing about a certain condition in a certain number of organs, the individual events constituting the disease being nothing but certain changes in these organs. It is therefore of paramount importance to ascertain what the organs are which are implicated; what the conditions are which are induced in them; what organ sustains the first assault, and what organs are attacked in succession. The pathology about to be laid before the reader will demonstrate the first two points; the establishment of the last two will be attempted by an examination of the history of the cases.

“Without doubt the life or death of the patient depends upon these conditions of the organs. In a practical point of view, therefore, this is the kind of knowledge with which it is of the greatest importance that the practitioner should be familiar. Some of these conditions are indicated by certain signs during life; some of these indications are obscure, and may be easily overlooked or mistaken by those who have not acquired an accurate and extensive acquaintance with the disease. On the other hand there are external appearances which are extremely apt to suggest a false notion of the state of the internal organs. These fallacious appearances are sure to lead those whom they deceive into a mistaken, often into a mortal practice. Certain conditions of vital organs, if allowed to remain long, will terminate in fatal changes of structure.

“Certain remedies, if applied in due season, and with due vigour, are capable of removing those conditions. Life, therefore, must sometimes depend upon the power of making this diagnosis with accuracy. Of some of these conditions the diagnostic marks are clear and certain; those which indicate other conditions, in the present state of our knowledge, are obscure and uncertain. I have thought no labour too great to put the reader in possession of all that I have been able to ascertain with regard to this most important part of the subject. In the attempt to communicate this information, I am conscious that I may incur the charge of tediousness, on account of the number of repetitions which occur, and which I have allowed to remain, because I could see no means of removing them without sacrificing clearness to brevity. Elegance and conciseness in a work of this nature ought not for a moment to be considered if they endanger its practical usefulness. A knowledge of the condition of the internal organs in fever can alone guide us to a rational and successful treatment of this most dangerous disease. It is only by examining the body after death that we can acquire this information; it is only by observing the symptoms during life, and comparing them with the morbid appearances after death, that we can discover the signs which indicate the existence of these states. For these reasons

I have not hesitated to give numerous cases, and to detail many dissections. If after the study of these cases and dissections the practitioner be enabled at the bed-side of the fever patient to discover with greater precision and certainty than heretofore the condition of the brain—the condition of the lungs—the condition of the intestines, he will not think the time he has devoted to the investigation ill spent, nor shall I think myself without reward for the labour it has cost me to draw up the record. It is only when from external appearances we are able to see what is going on within each of the great cavities of the body, as clearly as we should do if their walls were transparent, that our interference can be sure of doing good, or secure from doing mischief; it is this kind and degree of knowledge alone which can teach us both when to act and what to do; and what is of almost equal importance, when to stop and to attempt nothing; and if the perusal of this work should contribute in any measure to the attainment of this knowledge, I shall not have laboured wholly in vain ‘to add something to the treasury of physic.’ ” pp. 21–23.

If by “condition of the organs” the author could be supposed to have reference to changes in the state of the functions, as well as of the structure of the several organs, few perhaps would be found to differ from him in this view of the disease. But this is far from being his view of the matter. Not from this passage only, but from the whole work, it appears that he recognises no derangement of the powers or functions of any organ which does not bring with it the evidence of its existence by a positive change of structure, manifested by certain diagnostic signs during life, and clearly exhibited by dissection after death. Thus, the whole class of *functional* diseases, in contradistinction from *organic*, is to be thrown out of our consideration.

This is a great change in the philosophy of disease, and one which we are not yet prepared to adopt in the aggregate. It is indeed not unlikely to be true, that every change of function is accompanied by some variation in the condition of the solids which enter into the minute composition of the organ: and it is perhaps possible that our improvements in anatomical science, both healthy and morbid, may eventually extend so far as to enable us to appreciate all such changes, and apply them to the purposes of pathology and practice. We are willing to allow too that a diligent and vigilant examination might often discover organic changes of structure in cases which are now suffered to pass as purely functional. This is especially the case with the diseases of habitual drinkers of ardent spirit. Every practitioner knows how badly these patients bear bleeding, and other depletion, even in diseases which freely require them in other persons. This fact is generally attributed to exhaustion of the excitability of the living body by unnatural stimulus, and perhaps in most cases this is the only explanation we can give of it. Yet we have some-

times seen in such cases, and with no more than usual indication of it in the character of the symptoms, suppuration and other extensive organic changes in the brain and its membranes. It would require much more extensive observation of similar cases, with similar results, to establish this as a settled rule in pathology, especially since it is contradicted, by the negative testimony at least, of so many examinations in diseases of inebriates, where no such changes of structure were discovered.

It is to be expected, that with the advancement of medical knowledge, the number of diseases that are regarded as purely functional will be diminished, by the transfer of many to the class of those whose effects on the human system are more fully understood. But before we can give our consent to such a transfer, we must be well satisfied that the claim to a right understanding of a given disease is well founded. We surely are not to be called upon to take it all for granted, and rest satisfied with the opinion because an author chooses to make it the basis of a new system of pathology for an extensive class of diseases. It is true that a great variety of morbid changes of structure are exhibited in the dissections with which this work abounds. But these changes are not so connected with the symptoms of each case as to furnish the necessary evidence that they are dependant upon each other. The cases are detailed for an entirely different purpose, and the author seems scarcely to be aware that he is taking new ground, or ground that is not already perfectly settled, in the position to which we have referred.

We proceed with our author's theory of fever. And here we are happy to be able to give it in a condensed form in his own words.

“In relation to our present subject then, the first object of inquiry is, what are the events which invariably concur in fever?

“Where shall we look for the events? Not in the symptoms. Symptoms are not events; they are only indications of events; symptoms depend upon states of organs; they are the external and visible signs of internal, and, for the most part, as long as life continues, invisible conditions. It is then to the state of the organs that we must look for the events of which we are in search. Are there any states of any organs that always exist in fever? Are the states constant? Are the organs affected constant; and can both be ascertained? If this can be truly answered in the affirmative; if it can be proved that there are certain conditions of certain organs which invariably exist in fever, in every type, in every degree, in every stage of it, we shall have arrived at a satisfactory conclusion relative to the first part of our inquiry. The evidence is as complete as observation during life and inspection after death can make it, that a morbid change does take place in a certain number of organs in every case of fever, from the most trivial intermittent to the most alarming continued fever, from the mildest plague to the most malignant typhus; that at the two extremes

of this scale, and at all the intermediate gradations of it, there are certain organs which are always affected, and that the affection in all is similar. The identity of the organ is inferred from the indications they give of disordered function during life; the identity of the affection* is inferred from the similarity of morbid appearances which they exhibit on examination after death.

“The organs affected are those which constitute the nervous system, those which constitute the circulating system, and those which constitute the systems of secretion and excretion. The spinal cord and the brain; the heart and the arteries, especially the capillary extremities; the secreting and the excreting organs, which in fact are composed essentially of the capillary extremities of the arteries; the secreting and excreting extremities of these arteries, especially as they terminate in the external skin and in the mucous membranes which form the internal skin; this is the chain of diseased organs: derangement in the nervous and sensorial functions; derangement in the circulating function; derangement in the secretory and excretory functions; this is the circle of morbid actions.

“There never was a case of fever in which all these organs and affections were not more or less in a morbid state; there never was a concurrence of this morbid state in this complete circle of organs, without fever. The events which invariably concur in fever, then, are a certain deviation from the healthy state in the nervous and the sensorial functions; a certain deviation from the healthy state in the circulating function; a certain deviation from the healthy state of the functions of excretion and secretion. A deviation from the healthy state in one circle of actions will not present phenomena of fever; a deviation from the healthy state in two circles of action will not present the phenomena of fever. there must be a deviation in the three circles before fever can exist. Such then are the common phenomena of fever.” pp. 27-29.

“The order of events then is, first, derangement in the nervous and sensorial functions; this is the invariable antecedent; secondly, derangement in the circulating function; this is the invariable sequent; and thirdly, derangement in the secreting and excreting functions; this is the last result in the succession of morbid changes.

“Supposing the matter of fact to be as it is here stated, and the proof that it is so will be adduced hereafter, it is clear that we are in possession of the true characters of fever. We know the events, we know the order in which they occur, we know, therefore, what it is that constitutes the disease, and we know, consequently, what it is by which it is distinguished from every other malady. No other disease exhibits the same train of phenomena in the same order of succession. In inflammation some of the phenomena are the same, but the order in which they concur is not the same; and this affords a clear and universally applicable mark of distinction between fever and inflammation. In inflammation there is similar derangement in the secreting and excreting functions; there is also sometimes similar derangement in the circulating function; but the derangement in the nervous and sensorial functions is seldom if ever similar; the derangement that does take place in these latter functions, while it is apparently different in kind, is certainly and invariably different in the order of its occurrence.

“In pneumonia, in enteritis, in hepatitis, the spinal cord and the brain are never the organs in which the first indications of disease appear; the earliest in-

dications of disease that can be discovered have their seat in the affected organ itself; it is only after the disease has made some progress that other organs and functions are involved, and apparently the last to be involved, and certainly the least to suffer, is the nervous system.

“We can now then answer the question so often asked—are fever and inflammation the same? and if not the same, in what do they differ? Fever and inflammation are not the same, because the term fever is appropriated to the designation of a certain number of events which occur in a certain series: the term inflammation, on the other hand, expresses another series of events, each event composing this train succeeding each other in a different order; and the difference between the two series of events is precisely this difference in their individual phenomena and in their order of succession.” pp. 29, 30.

The distinction here attempted between fever and inflammation is arbitrary and unsatisfactory. A certain round of phenomena is assumed as essential to the character of fever, and whatever comes not within the circle is pronounced not to be fever; not because the phenomena themselves are not those of fever—for all the phenomena of inflammation are included within his essential characteristics of fever—but because they do not arise in the prescribed order—in other words, because they are too intractable to yield to their place in the new theory. Fever is made up of certain events, and these events include all the changes produced by inflammation; but because inflammation may also exist out of the train of those events, it must be excluded as a distinct disease, lest it should disturb that beautiful order of events upon which the whole theory rests. Doubtless inflammation is a distinct disease; but it is so for simpler and better reasons than for the far-sought reasonings of theoretical speculation. As well might we say that peritonitis is not inflammation, because it has not the cough and expectoration of pneumonia, as to say with our author, that increased vascularity of the mucous membrane of the bronchi, with purulent secretion, &c. is in one case inflammation, in the other not, according as it is or is not preceded by certain affections of the brain and nervous system.

Having thus stated his theory, our author breaks forth into the following glowing description of its universal adaptation to all varieties of fever.

“Supposing the proofs hereafter to be adduced to be conclusive, that the events in fever and their order really are what has now been stated, how clearly and beautifully does this view of the disease enable us to recognise one and the same malady through all the modifications it undergoes, and therefore through the countless aspects it assumes. Out of the system of organs that are always affected in fever, some may be more and some less diseased; and it is easy to see how, from this diversity alone, the utmost variety may arise in the external character of the disease. Thus at one time the spinal cord and the brain may be intensely

affected; consequently the patient may be seized with violent pains in the limbs; with ferocious head-ache; with early delirium, which may rapidly increase to such a degree of violence as to require restraint; or, on the contrary, all the muscles of voluntary motion may be seized instantaneously with such a loss of energy that they may truly be said to be paralyzed: at the same time the sensorial faculties may be overwhelmed almost as completely as they are in apoplexy; thus may be formed one type of fever: and such a concurrence of symptoms is actually found to exist: it ushers in the plague when it first stalks into a devoted city to sweep away its thousands and its tens of thousands.

"At another time the disease may seize with peculiar violence on the organs of secretion, and especially upon those which belong to the digestive apparatus: hence the liver may suddenly pour forth an immense flow of bile, so vitiated in quality as to irritate and inflame whatever it touches, and so abundant in quantity as rapidly to diffuse itself over every part of the body, and to tinge almost every tissue and every fluid: at the same time the stomach and intestines may be involved in such acute disease that the powers of life may be exhausted in a few hours by incessant vomiting and unconquerable purging: thus may be formed another type of fever; and such a course of symptoms actually occurs in the yellow fever of the West Indies.

"Now we may witness a severe though a less violent affection of the spinal cord and the brain, than occurs in plague. There may be present great pain in the back and limbs; intense head-ache; early and violent delirium; a burning skin; a quick and strong pulse; urgent thirst, and constipated bowels: or, on the contrary, there may be not pain in the head, but giddiness: not delirium, but stupor; not a burning hot, but a moderately warm or cool skin; not a frequent and strong, but a frequent and feeble pulse. In either case we have a fair specimen of the common fever of our own country, the first forming the variety which may be termed acute, the second sub-acute cerebral.

"Now again we may witness a concurrence of symptoms very similar to the latter in the commencement of the attacks, only that there is from the beginning greater prostration of strength, and a rapid increase in the derangement of the nervous and sensorial functions, together with a brown and dry tongue, a tender abdomen, and dark and offensive stools: thus may be formed another type of fever to which is commonly assigned the name of typhus." pp. 31, 32.

It is an easy matter to frame the theory which shall adapt itself to a great variety of occurrences. But to establish the theory upon the basis of facts and sound reasoning, *hoc opus, hic labor sit*. It would be doing great injustice to Dr. Smith, however, if we were to leave the impression that he rests the truth of his theory at all upon this ground of adaptation. His constant appeal is to observation and fact, with how much success we shall presently see; and having given an outline of his view of the nature of the disease, he proceeds to a particular description of fever as it is exhibited in its symptoms and by dissections. In doing this, although his object is of course to illustrate and support his particular views, he enters into his descriptions with so much ardour, that he seems at times almost to forget the tram-

mels of his theory. And it is no difficult matter for the reader, when in pursuit of practical instruction, to forget it entirely; and then he will find a rich fund of interesting and useful information. We regard this as by far the most valuable part of the treatise; perhaps we might say the part which alone can secure to the work any permanent reputation in the profession.

We cannot follow the author in detail in his descriptions of fever. A clear and animated description will not admit of being condensed into an abstract without becoming dull and obscure. He does not regard with any favour the divisions of fever into synocha, synochus, and typhus; for, as in his view, all fevers are of the same general character, the only distinctions necessary to be observed between the several cases are such as have reference to the intensity of their action upon each of the several organs. In order to avoid coining new terms, however, he retains those of synochus and typhus, taking care to explain them as expressing only different degrees of severity. Each of these has two sub-divisions, *mitior* and *gravior*, and each of these again is farther distinguished as it is accompanied by severe cerebral, thoracic, or abdominal affection.

We have said that the author often enters into his descriptions of the phenomena of fever with great freedom and spirit, as if released from the necessity of supporting a favourite theory. Yet he as frequently returns to it, and his descriptions are interspersed with remarks designed to show the applicability of the various events described to the pathological views before explained. Instead of following him through his details of symptoms and morbid appearances, we may therefore take this occasion to inquire how far his peculiar views of the nature of the disease is supported by them.

It must here be remembered that an affection of all the organs concerned in producing the train of events which, in the view of the author, constitutes fever in every case of the disease, and of sufficient severity to show itself by a change of structure, is an indispensable part, or rather the great whole of his theory. There must in every case of fever be "the invariable concurrence of a particular number of events," and added to it "invariableness of concurrence in a particular order." "In the organs," we are told, "we can find a perfect uniformity; their condition is as fixed and invariable as the return of day and night." "The causes of fever, whatever they be, under the same circumstances, always produce the same conditions of the organs." And these conditions, and the order in which they show themselves, are, "first, derangement in the nervous and sensorial functions; secondly, derangement in the circulating function;

and thirdly, derangement in the secreting and excreting functions."

A careful comparison of the cases so abundantly furnished in the two works before us, will enable us to judge how far these opinions are supported by them. For as it is assumed to be the essential character of the disease, that certain affections should have manifested themselves, if the evidence of any of these affections is wanting in any case, certainly if it is wanting in any considerable number of cases, then the whole theory necessarily falls. Now, the impression which was made on our own minds, and which we believe will be made on the mind of any one, on a first perusal of the descriptive part of the work, is that of the great diversity of the cases, illustrating a great variety of affections having but a general relationship between them. Much of this diversity may be accounted for, on a closer examination, by the different degrees of intensity of the several organs in the different cases. But there is also much that cannot be so resolved into uniformity.

We may discover in this part of the work a readiness of accommodation of the facts described to the theory adopted, which shows how strongly that theory has taken possession of the author's mind, although we see not the least appearance of intentional unfairness. For example, the affection of the head, which is regarded as the first in the train of events that constituted fever, is of so general a character, that any morbid change within the cranium is taken as proof of its existence. Vascularity of either of the membranes, or of the brain itself—deposition of lymph, or serum, or pus, between the membranes, or in the ventricles, or at the base—hardening or softening of the substance of the brain—are all, or either of them, received as satisfactory evidence that fever has been there. We may well ask if some or other of these morbid appearances within the cranium will not be formed in a large proportion of cases of death produced by any other disease whatever. And yet enlarged as is this allowance for the effects of fever in the head, there is a considerable proportion of cases in which none of them are discovered. Of about a hundred cases in which the state of the head, as exhibited by dissection, is reported by Dr. Smith, the appearance of the head in nine is said to be natural. And it is worthy of remark too, as it regards the position that affections of the organs are always connected with some change of structure, that some of these nine cases exhibit their full share of pain in the head, confusion of mind, and delirium, during life, although no traces of the derangement are left upon the organ after death.

The absence of marks of disease, which, according to Dr. Smith's theory, should be always present, becomes still more striking by a reference to Dr. Tweedie's report of the cases during the year of his clinical illustrations. The whole number of deaths that year, the cases of which are all reported, was seventy-two, only fifty-four of which were examined. Of this fifty-four, in fifteen the appearances in the head are declared to be healthy; those of the chest are so in fourteen, and those of the abdomen in twelve.

This leads us to take notice of the cases of which the reports are repeated in the two works. It might have been expected that where there is so strong a predilection for a favourite theory, those occurrences which go to support that theory should be stated somewhat more strongly than they would be by an indifferent observer, and some instances of this kind appear; for example, when Dr. Tweedie says, there were "slight appearances of inflammation of the membranes of the brain, with increased serous effusion under the arachnoid, and also in the lateral ventricles," p. 338, Dr. Smith says, "arachnoid highly vascular; effusion beneath all the membranes; more fluid than natural in the lateral ventricles." p. 160. Again Dr. Tweedie says, "slight serous effusion beneath the arachnoid," p. 339, and Dr. Smith, "effusion between all the membranes, and into all the ventricles." p. 182. Similar differences in the strength of the expression may be observed in many other instances; but in none do they essentially change the general aspect of the case.

In narrating his cases, Dr. Smith has distinguished those morbid appearances which he does not regard as the effects of fever from those which are produced by that disease. This mode of proceeding exhibits another facility by which he is enabled to escape from the inconvenience of untractable symptoms or occurrences. Many of the distinctions appear to us to be wholly arbitrary, or at least to have no better ground to rest upon than the fact that some occurrences are more frequently attendant upon fever than others. For example, inflammation of the mucous membrane of the lungs is always regarded as one of the legitimate effects of fever, while inflammation of the serous coat, even when the marks are those of recent affection, is excluded. Yet this last occurrence is found nearly, or quite as frequently as the other.

Infiltration into the substance of the lungs is sometimes included among the effects of fever, and at others rejected. Tuberculated lungs are in one instance at least included, although generally tubercles, hepatization, and other changes of a more chronic character, are regarded as accidental. The same irregularity is observable in

assigning the morbid appearances discovered in the abdomen. In general, inflammation of the mucons membrane, here as in the thorax, is set down to the fever, and that of the serous membrane to other causes, even when the intestines are found adhering together as the consequence of recent inflammation in the immediate vicinity of ulcerations in the mucous membrane. Inflammation and ulceration of the mesenteric glands, (and in one case which Dr. Tweedie calls scrofulous ulceration,) are attributed to the fever. So also are hardenings and softenings of the spleen and the pancreas, while similar changes in the texture of the liver are generally excluded. It may perhaps be that some of these irregularities are the result of accident or inattention, or of typographical errors. But it is impossible not to feel some distrust of a theory which requires or admits such remarkable facilities for escaping from unfavourable conclusions.

We make one more extract from this part of the work, in order to give the author's summary of his theory.

“In conclusion then, the doctrine of fever, which appears to approximate most nearly to the truth, may be summed up in few words. The immediate cause of fever is a poison which operates primarily and specifically upon the brain and the spinal cord. The diseased state in which these organs are brought by the operation of this poison, deprives them of the power of communicating to the system that supply of stimulus, (nervous and sensorial influence,) which is requisite to maintain the functions of the economy in the state of health. The organs, the seats of the functions, deprived of their supply of nervous influence, become deranged, the derangement in each taking place in a fixed order, and in a determinate manner. Subsequently to the nervous and the sensorial, the organs the next to suffer are those of the circulation, then those of respiration, and ultimately, those which belong to secretion and excretion. The condition of the nervous system which produces this derangement in this circle of organs, occasions further, in that portion of the circulating system which consists of the capillary blood-vessels, that peculiar state which constitutes inflammation; hence inflammation is almost always established in one or more of the organs comprehended in the febrile circle, and sometimes in all of them. The peculiar and primary affection of the nervous system, which is here assigned as the cause of inflammation, does not become identical with inflammation, but superadds the morbid condition of inflammation to its own; does not lapse into or terminate in the inflammatory state, but accompanies it, and by this combination modifies in a peculiar manner the inflammatory process.” pp. 203, 204.

We have followed our author patiently, and we trust fairly, through all his proofs of the positions upon which his theory is founded; and the result is, that to our minds he does not furnish satisfactory evidence of such conditions of the several organs, and such an unvarying

train of event as his theory supposes. We have hardly been able to escape from some feeling of surprise, that with so great a fund of materials before him, and with such power of using them, he has not made out a much stronger case than we think he has presented to us. We account for it only by the belief that his fairness and integrity of mind have shunned to seek out facts on which to establish his theory, although when the facts are freely and truly presented, so far as it is possible for any man, whose predilections are so involved in them, to present them fairly, he has not failed to make the strongest use of them for this purpose.

There is something in a high degree irrational in supposing two independent causes of inflammation, the one arising from the train of events which produce fever, the other entirely disconnected from all such events. This absurdity, (it is not too much to call it so,) we are driven to by the determination to acknowledge only a single agency operating at the same time to produce disease. And yet how often do we, in practice, find diseases to be modified and complicated by occurrences obviously independent of each other in their origin. Nay, we may rather say that death is rarely produced in our climate by a simple uncombined disease, compared with the frequency with which it is the result of a perplexing complication of disorders. There is no difficulty in supposing that the causes which produce inflammation should operate at the same time with those which produce fever, as well as, or even more frequently than, at other times, and the greater or less predominancy of either the fever or the inflammation, will give rise to all the modifications between them which are ever observed in practice.

We pass over the chapter on the cause of fever, because it is a subject which has been abundantly and ably discussed among us recently. Of our author's treatment of fever we have something to say, but we are unwilling to enter upon it at the close of so long a discussion, and we therefore defer our remark to another number.

E. H.

ART. X. *Report on the Epidemic Cholera Morbus, as it visited the Territories subject to the Presidency of Bengal, in the years 1817, 1818, and 1819.* Drawn up by order of the Government, under the superintendence of the Medical Board. By JAMES JAMESON, Assistant Surgeon and Secretary to the Board. Calcutta, 1820, pp. lxxxiv and 324, 8vo. With a map.

Sketches of the most Prevalent Diseases of India; comprising a Treatise on the Epidemic Cholera of the East, &c. &c. By JAMES ANNESLEY, Esq. Madras Medical Establishment, &c. &c. &c. Second edition. London, 1831. With a map.

Treatise on Cholera Asphyxia or Epidemic Cholera, as it appeared in Asia, and more recently in Europe. By GEORGE HAMILTON BELL, Fellow of the Royal College of Surgeons, Edinburgh, late Residency Surgeon, Tanjore. Edinburgh and London, 1831, pp. 150, 8vo. With a map.

A History of the Contagious Cholera, with Facts explanatory of its Origin and Laws, and of a Rational Method of Cure. By JAMES KENNEDY, Member of the Royal College of Surgeons, London, pp. 291. With two maps.

Quelques Réflexions sur le Choléra Morbus. Par le Dr. JAEHNICHEN, Membre du Conseil temporaire de Médecine de Moscou. Moscow, 1831.

History of the Epidemic Spasmodic Cholera of Russia; including a Copious Account of the Disease which has prevailed in India, and which has travelled under that name from Asia into Europe. Illustrated by numerous Official and other Documents, explanatory of the Nature, Treatment, and Prevention of the Malady. By BISSET HAWKINS, M. D. &c. London, 1831. pp. 306. With a map.

CHOLERA is the absorbing topic at the present moment in the medical world, and even in the political, it divides attention with the questions, momentous as they are, which are now agitating the nations of Europe, and shaking to the very foundations their ancient institutions. The mystery which seems to hang over the origin and mode of propagation of this pestilence, has invested it with a sort of fearful interest; whilst there is something so appalling in the steadiness with which it has advanced over a large portion of the globe, unimpeded by oceans, or mountains, or winds, or the artificial barriers by which man has attempted to arrest its progress—in the rapidity with which it destroys its victims, often striking them to the earth, to expire on the spot where they have fallen—and in the awful

mortality it has caused, compared to which the destruction of life in the most destructive wars sinks into insignificance—that it would be indeed extraordinary, were it not the subject of universal attention. Apart, however, from its general interest, it has for us, as physicians, higher claims to attention. Commencing only a few years since near the borders of the Ganges, it has invaded nearly the whole of Asia, overrun the east and north of Europe, and at the latest dates was steadily advancing, threatening to extend over the remainder of the eastern hemisphere, and affording even grounds for fear that the western world may not escape its visitation. It consequently becomes our duty to render ourselves familiar with its history, character, and treatment, since we know not how soon we may be called upon to contend against its ravages. The anomalous features which this disease has exhibited, the contradictory and even irreconcilable statements that have been given of its etiology, and the diversity of sentiment entertained as to its pathology and best mode of treatment, render the acquisition of correct knowledge in relation to these points, a task of no little difficulty. We shall endeavour to assist our readers in the accomplishment of it, by laying before them the most authentic facts that we have been able to glean from the various sources that have been open to us, and arranged in the best manner that the late period at which many of the documents were received, will permit. Without further preface then we shall commence with a brief sketch of the history of the complaint.

Cholera is not a new disease. It is noticed in the earliest records of the science. HIPPOCRATES distinctly speaks of it, and it is very accurately described by ARISTÆUS, of Cappadocea. SYDENHAM notices its prevalence in London, in 1669 and in 1676; and HUXHAM, in 1741. It existed extensively in Paris at various periods, particularly during the summer of 1730, and in July, 1780; and perhaps there is no country in which sporadic cases do not occasionally occur. In India it appears to have been endemic from the most remote periods. Mention is said to be made of it in the ancient medical writings of the Hindoos, and it is noticed by the earliest European writers on the diseases of that country. BONTIUS, a Dutch physician, residing at Batavia, and who wrote in 1629, very accurately describes it. LEBEGUE DE PRESLE speaks of its having prevailed in upper Hindostan, in 1762, where he says it destroyed 30,000 negroes, and 800 Europeans. Dr. PAISLEY, in a letter from Madras in 1774, states that it was often epidemic, especially among the blacks. M. SONNERAT, in the account of his travels in India, between the years 1774 and 1781, mentions that cholera prevailed on

the Coromandel coast, and at one period more particularly assumed an epidemic and malignant character.* CURTIS, in his work on the diseases of India, and GIRDLESTON, in his essay on the spasmodic affections of that country, speak of an unusual prevalence of the disease during 1781 and 1782. It prevailed in the Northern Circars in the early part of 1781 and in the latter end of March it affected at Ganjam, a division of Bengal troops, consisting of five thousand men, who were proceeding under the command of Colonel Pearse of the artillery, to join Sir Eyre Coote's army on the coast. Men previously in perfect health dropped down by dozens, and those even less severely affected were generally dead or past recovery within less than an hour.† Above five hundred were admitted into hospital in one day, and in three days more than half the army were affected. The disease was referred to the heavy dews and great vicissitudes of the weather, connected with the peculiar situation of the troops; they had been marching almost incessantly for six days through sand and salt water, and were at length so enfeebled as scarcely to be able to move. A violent wind blew day and night along the whole shore, and although it was not so strong at night, it was then accompanied with such a penetrating moisture as to wet through the thickest woollen clothes. The troops were besides in no condition to withstand the inclemency of the season. They had no tents, and few possessed even a blanket to shelter them on getting to their ground. They generally marched in the night, and many suffered by incautiously lying down, while warm from exercise, and falling asleep, exposed to the influence of a damp and noxious atmosphere.‡

During the months of April and May, 1782, the disease prevailed at Trincomalee, and in Sir Edward Hughes' squadron at Madras.

In April, 1783, it broke out at Hurdwar, on the Ganges, a spot held particularly sacred by the Hindoos, where an immense concourse of people annually assembled for the purpose of ablution in the holy stream. The year in question, the number of persons collected was believed to amount to between one and two millions. It is the custom of the pilgrims to repair to the bed of the river, where they pass the night with little, if any shelter; many persons being crowded together under the cover of a single blanket thrown out as an awning. The temperature is very variable; the days being hot and the nights cold, with heavy dews, and sudden chilly blasts from the clefts in the mountains. On the present occasion these causes§ were

* Annesley, p. 7.

† Bengal Report, p. xvii.

‡ Idem, p. xx, i.

§ "One manuscript in our possession says, the disease broke out on the springing up of an easterly land wind during a hot night, and carried off innumerable persons."—*Bengal Report*.

sufficient to generate the cholera, which broke out soon after the commencement of the ceremonies, and raged with such extreme violence, as to cut off in less than eight days, above twenty thousand victims. So confined, however was its influence, that it did not reach the village of Jawalapore only seven miles distant, and ceased immediately on the concourse breaking up on the last day of the festival.*

In 1787 the disease prevailed at Arcot and Vellore, and about the end of March, 1790, it appeared in a detachment of Bengal troops, under Colonel Cockerel, whilst marching to Srirangapatam. The weather is said to have been very uncomfortable, a fresh southerly wind prevailing during the day, increasing in strength towards mid-day, and dying away in the evening. A calm night succeeded, close and sultry in the early part, and damp and chill, with heavy dew, and slight easterly wind from the sea towards morning. The days were cloudy, and the atmosphere loaded with vapour. On the 15th of April the activity of the disease was heightened by a heavy squall of wind and rain, which overtook the detachment at Manikpatam, on the north side of Chilka lake. From this time until the middle of June, when the detachment had passed Ellore, and the weather had become more moderate from frequent rains, the disease proved very fatal. The troops had no tents, and were sheltered from the inclemency of the night by only a blanket stretched across a pole, and even this was not possessed by the camp followers. The troops were much harassed by long marches on a sandy soil, frequently not affording water, and from the difficulty of dragging the guns over very bad roads, they frequently did not reach their ground until sunset. In the middle of the day the thermometer was as high as 124.°†

In fact a disorder possessing the principal characters of cholera appears to have prevailed more or less endemically during the hot and rainy seasons of every successive year in the lower provinces of Hindostan, but chiefly limited in attacks to those whose constitutions had been debilitated by poor, ungenerous diet, and by hard labour in the sun, and who were badly clothed, and frequently exposed in low and foul situations to the cold and damp air of the night. It rarely occurred during the dry months. Europeans were scarcely ever affected by it, and the better class of natives were rarely subjected to its influence.‡

No positive evidence has been found of its having prevailed extensively as an epidemic previously to 1817, though Mr.

* Bengal Report, p. xvi.

† Idem, p. xxii.

‡ Idem, p. 2.

Bell thinks it probable that the tremendous pestilences, which are so frequently described by native historians as having devastated Indian armies, were the cholera.* It must also be mentioned that it appears to have assumed an epidemic form in 1781, the period at which it attacked Colonel Pearse's detachment at Ganjam, for the supreme government, in communicating this latter event to the court of directors, state that the disease was not confined to Ganjam: but afterwards found its way to Calcutta, and after chiefly affecting the native inhabitants, so as to occasion a great mortality during the period of a fortnight, pursued its course to the northward.†

It is much to be regretted that all attempts to trace its further progress has proved fruitless.

The disease, it is generally conceded, first acquired its present epidemic character in 1817, and it appears to have first attracted particular attention on its breaking out at Jessore, a large and populous town, about sixty-two miles east of Calcutta. It did not originate there, however, as is usually represented, but broke out simultaneously in various and distant parts of Bengal. As early as July, it appeared at Sunergong, and had even begun to prevail epidemically in the distant provinces of Behar and Dacca; on the 11th of the month it broke out in the city of Patna, three hundred miles north-west of Calcutta, and spread to the contiguous station of Dinapore, and to the adjacent villages, early in August, and by the middle of the month, it appeared in the remote province of Silhet. On the 23d of August it was raging at Chittagong, far round the eastern corner of the Bay of Bengal, at the same moment in Rajshaky, a central district lying east of the Ganges, and not a week afterwards in the high and distant tracts of Bhaugulpore and Monghyr.

On the 28th of August, it was reported to the government that a malignant species of cholera had appeared at Jessore, and was cutting off from twenty to thirty persons daily. It was stated in the report, that "the inhabitants astonished and terrified at the unaccountable and very destructive inroads of the pestilence, are flying in crowds to the country, as the only means of escaping impending death."‡ In the short space of a few weeks it destroyed upwards of six thousand persons.

The exact date of the appearance of the disease in Calcutta, has not been ascertained, but there appears no doubt that many cases occurred among the native population as early as the middle of Au-

* Bell, p. 70.

† Bengal Report, p. xxi, ii.

‡ Idem, p. 3.

gust. At this time, however, the disease appears to have exhibited a mild type, but by the latter end of the month it assumed a malignant form, and during the first days of September it committed great havoc among the natives.

On the 5th of the month the disease appeared among the European inhabitants, and on the 15th, an official notification of the existence of cholera in Calcutta was forwarded to the government.

By the latter end of September the disease was prevailing throughout the whole province of Bengal, from the most easterly limits of Purnea, Dinagepore and Silhet, to the extreme borders of Balasore and Cuttack; and from the mouth of the Ganges nearly to the confluence of that river with the Jumna, a space of upwards of four hundred miles in length and breadth. In this area of several thousand miles, few places escaped the invasion, and the cities of Dacca and Patna, the towns of Balasore, Burrissaul, Rungpore, and Malda, suffered severely. The large and populous city of Mooshedabad, which, from extent and local position, was apparently favourably circumstanced for the attacks of the epidemic, it is remarkable, escaped with comparatively little loss, whilst all around was severely scourged.

During the autumn of 1817 the disease extended itself to Muzafferpore and beyond the precincts of Bengal, and appeared at Chuprah, and at the cantonment of Ghazepore; its attacks in these places were, however, confined to the towns themselves, or villages in their immediate vicinity; the principal portion of the adjoining country, at this period, entirely escaping the disease. Early in November it attacked the grand army, then stationed at Bundelcund, a portion of the Allahabad province. This army had been assembled in anticipation of a war with the Pindarees, and the centre division consisting of ten thousand fighting men, and eighty thousand camp followers, was encamped on the banks of the Sinde, under the immediate command of the Marquis of Hastings. Here the cholera exercised its most destructive power. It is uncertain whether it made its first approaches on the 6th, 7th, or 8th of the month. After creeping about, however, in its wonted insidious manner for several days among the camp followers, it seemed all at once to have gained vigour, and burst forth with irresistible violence in every direction, extending through the whole camp before the 14th of the month. Old and young, European and native, fighting men and camp followers, were alike subject to its attacks, and all equally sunk in a few hours under its pestilential influence. It was a common occurrence for sentries to be

suddenly seized at their posts, and having been carried in to have two or three successors before the two hours duty was performed. Many of the sick died before reaching the hospitals: and even their comrades, whilst bearing them from out-posts to medical aid, sunk themselves suddenly seized with the disorder. The mortality at length became so great that there was neither time nor hands to carry off the bodies, which were thrown into the neighbouring ravines, or hastily committed to the earth on the spots where they had expired, and even round the walls of the officers' tents. In the five days included between the 15th and 20th of November, the number of deaths amounted to five thousand. The natives thinking their only safety lay in flight, deserted in great numbers: and the highways and fields for many miles round were strewed with the bodies of those who had left the camp with the disease upon them, and speedily sank under its exhausting influence. The camp being now cumbered with the sick, the Marquis of Hastings determined to seek a purer air for the recovery of his sick. Although every means was put in requisition for their removal, a part was necessarily left behind. "And as many who left the carts, pressed by the sudden calls of the disease, were unable to rise again, and hundreds dropped down during every subsequent day's advance, and covered the roads with dead and dying: the ground of encampment, and line of march, presented the appearance of a field of battle, and of the track of an army retreating under every circumstance of discomfiture and distress." The exact mortality could not be ascertained, but it appears that of the fighting men seven hundred and sixty-four fell victims, and it was estimated that about eight thousand camp followers, or one-tenth of the whole, were cut off. On arriving at the high and dry banks of the Betwah at Erich, the army soon got rid of the pestilence, and met with returning health.

During December, the disease appears to have every where abated, and in January of 1818, it was nearly extinct. Towards the latter end of February it however again revived with great force, and displayed those remarkable characters which have since distinguished it. Our limits will not permit, nor indeed would it be altogether interesting, to follow minutely the history of the disease in its subsequent march; all that we shall attempt at present will be to indicate its general course, although we may hereafter have occasion to notice some of the particulars of its progress, when considering the manner in which it extended itself.

Tracing the disease south from the province of Bengal, we find it prevailing at Ganjam in March, 1818, at Madras in October, and at Trincomalee, in the Isle of Ceylon, in December. It reached Palamcottah and Trivanderam, near the southernmost part of the Peninsula, in January of the following year, in November, Mauritius, and in January, 1820, the Isle of Bourbon.

Following next its eastern route, we find it to have appeared in Arracan in 1818; at Penang, Bankok, Achern in Sumatra, and at Samarang in Java, in 1819; at Manilla, Canton, &c. in 1820; and in 1821, it entered Pekin, where it prevailed during that and the two following years. By the latter end of 1823, it had traversed the Molucca or Spice Islands, including the Isle of Timor, near to New Holland, where it appears to have attained its south-eastern limits.

In its extension to the westward, the pestilence reached the Island of Bombay in August, 1818. In June, 1821, it entered Muscat, and then ascended the Persian Gulf, visiting the sea-port towns on either side. Extending inland, it spread from Busheer, through Persia, and from Bassora through Asiatic Turkey. In its latter route it reached Bagdad in 1821, Mosul, Tauris, &c. in 1822, and before the autumn of 1823, it had extended to Antioch, Diarberk, Erzeroum, &c., threatening on the one hand to extend through Turkey into Europe, and on the other through Arabia into Egypt; it suddenly however stopped in its course, and at that time proceeded no further in those directions.

In its progress through Persia, the first place of note that suffered was Shiraz, where it broke out about the middle of September, 1821. Passing by Isfahan, the disease next appeared at Yezd, but in October it broke out in the former city, where its ravages were soon arrested by the cold season. The following spring, however, it revived with renewed force, and by the close of 1822, almost every place of note in Persia had been traversed by the pestilence, and during the following year the few places that had hitherto escaped were visited. In August, 1823, the province of Shirvan was invaded, and after traversing Baku and other ports on the western border of the Caspian sea, it reached in September, Astracan, near the mouth of the Volga, and threatened Europe also in this direction; but after prevailing until the rigour of winter, it here likewise died away, and relieved Europe for the time from the impending danger.

We have but little knowledge of the history of the pestilence during the succeeding six years. It is known to have reappeared in different parts of Persia for several years in succession, as was usually the case where it had once prevailed; and it is also said to have ravaged for some

years the interior of China, and to have passed to the north of the great wall and desolated several places in Mongolia, by 1827.

In the summer of 1829, the pestilence however appears all at once to have gained renewed force, prevailing with great violence in several parts of eastern Persia, more especially in the province of Khorazan, and in various districts of Bucharía, particularly in Chirza, a city in the province of Kharazm, situated on the Jihon, a stream which falls from the south into the sea of Aral, and where some of the Bucharian caravans assemble previous to crossing the great Steppes of the Kirghis-Kaisaks. In August the disease reached Orenburg, the capital of the province of the same name, situated on the Tartar frontiers, four hundred miles north of the Caspian. From the official reports it appears that the first well-ascertained case of cholera at Orenburg, occurred on the 26th of August; a week afterwards a woman died suddenly, it was supposed from the same disease, and on the 8th of September, a joiner died after twelve hours illness. This last was unquestionably a case of cholera. On the 9th, two more cases occurred, on the 10th, two more, and after this it became rapidly prevalent. By the 20th of November it had entirely ceased. Out of a population of eleven thousand, eleven hundred were affected, of whom only two hundred died. No cases appear to have occurred in any other part of the Orenburg government until the 23d of September, when it broke out at the fortress of Rásúpna, sixty miles west of Orenburg. On the 30th, cases occurred at Berdsk, a small station, twelve miles north of Orenburg, and by the middle of November, it had spread over a district of country of about two hundred miles square.* From this period the disease abated, and by the latter part of February, 1830, was entirely extinct in the Russian dominions.

The following summer, however, it appeared in a different quarter of the empire: viz. on the Persian frontier of Georgia. It has been ascertained that the disease prevailed in June in various places in the Persian province of Ghilan, and among others at Reschd, a sea-port town on the southern shores of the Caspian. From this it extended itself northward, along the western border of the Caspian, to Baku, another port, two hundred miles from Reschd, which it reached early in July, and north-westerly along the river Kur to Tiflis, the capital of Georgia, four hundred miles from Reschd, where it arrived on the 27th of July. In this latter city it attacked in ten days five hundred and seventy-nine persons, of whom two-

* *Die Asiatische Cholera in Russland, &c. Von Dr. J. R. Lichtenstadt. Berlin, 1831. pp. 218. 8vo.*

hundred and thirty-seven perished. From Baku the disease proceeded along the Caspian, attacking various ports and adjacent towns, and on the 19th of July reached Astrachan, a town situated on an island in the principal mouth of the Volga, about thirty miles from the northern shore of the Caspian, and three hundred and fifty from Baku. Here in ten days twelve hundred and twenty-nine persons were seized, of whom four hundred and thirty-three died. From Astrachan it is represented as having spread along the Volga, reaching Taritzin, two hundred and twenty miles above Astrachan, by the 4th of August, and Saratov, two hundred miles further north on the 6th of the same month. Spreading west between Taritzin and Saratov, it invaded the country of the Don Kossacks, and extended to the government of Kiev, five hundred miles west of the Volga. In its progress north it spread across the country to Perza, one hundred and forty miles from Saratov, where it arrived on the 17th of August; on the 27th, it appeared at Samarov, a town on the Volga, two hundred miles north-east of Saratov; and by the latter end of the month it reached Nischnei-Novogorod. On the 9th of September it broke out at Kasan, two hundred miles *down* the Volga, and east of Nischnei-Novogorod, and about the same time at Kostroma, one hundred and fifty miles *up* the river, and north-west of Nischnei-Novogorod; about the middle of September it entered Moscow, two hundred and sixty miles from and a little to the south of Nischnei-Novogorod, and about the same time reached Twer and Vologda, not far from the sources of the Volga, thus traversing a distance from the Caspian of at least fifteen hundred miles in three months and a half.

Spreading to the south and south-west the following spring, it reached Warsaw about the middle of April. 1831. and Riga, Polangen, and Dantzic, ports on the Baltic, in May. By the middle of June it had spread north to St. Petersburg, and shortly afterwards broke out at Archangel, on the Dwina, near the White Sea. By the last of August it had spread south to Berlin, in the following month it entered Vienna, and on the 11th of October it broke out at Hamburg. In October it appeared at Sunderland, on the eastern shores of England, and up to November 28th, two hundred and ninety-four cases had occurred, of which eighty-six had been fatal, and thirty-two remained under treatment.

Egypt, which in 1823, like Europe, was suddenly preserved from the pestilence that was advancing towards it, was not destined to enjoy a continued immunity. The renewed activity which the cholera acquired in 1829, enabled it to continue its south-eastern progress, and at the present period it is committing the most extensive ravages in

various parts of Arabia and Egypt. It broke out at Mecca about the commencement of May, 1831, at the period when the pilgrims from every part of the empire were collected there to visit the holy places.*

The hasty sketch we have thus given of the geographical progress of cholera up to the present time, will enable our readers to perceive the extraordinary uniformity with which that pestilence has stalked from district to district and from kingdom to kingdom; a uniformity so great, as almost to permit the period of its arrival and the places which would be first attacked in a country, to be predicted.

Though on a great scale, however, travelling with remarkable regularity, the disease did not proceed in all directions without distinction or apparent choice, but exhibited extraordinary eccentricity at particular stages of its progress. It often seemed to affect certain lines, and to fix itself in particular divisions of country, sometimes appearing capriciously enough where it was not apprehended or expected, and in other instances following a path the direction of which could be traced with considerable accuracy. Sometimes it would take a complete circle round a village, and leaving it untouched, pass on as it were, wholly to depart from the district. Then, after a lapse of weeks, or even months, it would suddenly return, and scarcely reappearing in the parts which had already undergone its ravages, would nearly depopulate the spot that had so lately congratulated itself on its escape. Sometimes, after running a long course on one side of the Ganges, it would, as if arrested by some unknown agent, stop at once, and taking a rapid sweep across the river, lay all waste on the opposite bank.† This description of the peculiarities of the disease in India, is applicable to it in every part of its subsequent progress.

It was not uncommon for the disease to be confined to particular portions of barracks or camps, or even to one side of a street; or for one or two tents in an encampment to be entirely exempt. In 1819, the disease commenced in the eastern wing of the barracks of the king's fourteenth regiment, and extended in a westerly direction, but suddenly stopped at the ninth company; the light infantry escaped with one or two slight cases only.‡ It is stated in the Bombay report that two cavalry regiments in a camp were altogether exempt from the disease, while all the other regiments were attacked.

It is not the least remarkable anomaly presented by this strange pestilence, that after pursuing its rapid progress to the very confines

* Letter from the French consul general in Egypt. *Gazette Médicale*, Sept. 17, 1831.

† Bombay Report.

‡ Bengal Report, p. 113.

of Egypt and of Russia, it should all at once lose its power of extension to those countries, and although raging on their very borders, not pass them until seven or eight years afterwards.

At times, it seemed to avoid high and mountainous tracts, whilst at others they enjoyed no immunity from its attacks. Thus it wholly avoided Kumaon, the hilly districts north of Hurdwar, and the elevated stony belt which girts in the Rajpootana states to the north-west, but it subsequently passed the lofty range of mountains guarding Napaul, to the east, and in the government of Orenburg, it attacked villages fourteen hundred feet above the surrounding plain. Some cases occurred in a detachment of the seventh native infantry, on duty in the garrison of Jaragurb, a thousand feet above the plain: while the inhabitants of the town of Ajmeer, on the declivity, and at the base of the hill escaped.* It always exhibited, however, a marked partiality for low, damp places, with crowded populations, and there constantly exhibited its most destructive powers. Thus Jessore, where the disease first prevailed with the greatest violence, is a crowded, dirty, ill-ventilated place, surrounded by a thick jungle, and exposed, during the rains, to the effluvia of an immense quantity of stagnant water. The district of which it is the capital, in its southern quarter, is composed of the Sunderbunds, a name given to numerous, low, marshy islands, contained in the Delta of the Ganges, and formed by the different channels through which that river travels to the ocean. The Sunderbunds are overgrown with wood, and inhabited only by tigers, reptiles, and such other denizens of the wilderness.†

The native town of Calcutta, in which the disease broke out, contains, in connexion with the suburbs, at least five hundred thousand inhabitants.

“It is chiefly composed,” says Mr. Kennedy, “of miserable lanes, narrow, dirty, and unpaved; and the majority of the dwellings are low huts, with side-walls built of mud, mats, and bamboos, and covered with small tiles. Amongst the swarming population of these filthy receptacles, in which all descriptions of disgusting animal and vegetable odours abound, the distemper ran a long and wide career of destruction. Barely existing on a meagre diet of bad rice, the poor workmen, who had been abroad all day pursuing their laborious avocations in the sun, returned to their hovels in the most fitting state of body to contract the disease. Exhausted by the heat and fatigue, and confined during the night with their families, often six or eight in number, in a small space to which fresh air was a stranger, they were attacked by cholera in hundreds; and a frightful proportion of those attacked were swept away in the lapse of a few hours. This was more especially the case in the lowest part of the town and

* Bengal Report, p. 302.

† Kennedy, p. 20.

suburbs, and in the adjacent villages of Kidderpore, Manicktolla, Entally, Chitpore, Sealdah, &c. The condition, indeed, of the inhabitants of the latter places, is hardly to be imagined. These villages are made up of mud or straw huts, which are individually from six to twelve feet square, and so huddled together, that there is scarcely room to pass between them. In each of these unhealthy habitations a whole family resides, and, not unfrequently, cows and other domestic animals are added to the proper inmates. These dependencies, moreover, are every where intersected by pools, broad ditches, and channels, which, in the rainy season, become the reservoirs of foul water and corrupt weeds." p. 23, 4.

Every where indeed the disease not only showed a partiality for towns of this description, but it often was restricted to those portions of cities which were dirty and crowded. The Banians, or merchants of the town of Gunttoor, whose dwellings occupy a wide dry street, almost entirely escaped the disease, while the Brahmins, who inhabit a close damp alley, suffered in as great a proportion as any other class of people.* Argrah, an airy, open, clean town, was comparatively healthy, whilst Multra, a filthy place, with crowded bazars, was severely scourged.† In Tripoli, a very clean and well ventilated town in Syria, with a population of upwards of fifteen thousand, only thirty-one were attacked, of whom five died, and the disease prevailed for only a few days: whilst at Antioch and Gesra, low and badly aired towns, it continued for a month and committed frightful ravages. Innumerable other similar cases might be adduced, were it necessary, but we will not fatigue the patience of our readers by detailing them.

Filth and deficiency of ventilation are incontestibly among the circumstances which most favour the ravages of this disease. In addition we may notice as the most common predisposing or exciting causes of the pestilence, the immoderate use of intoxicating liquors or excesses of eating of any kind, especially of sour and unripe fruits, low living and unwholesome diet, cold drinks when the body is overheated, fatigue, exposure to cold and the sudden suppression of the cutaneous exhalation, sleeping on the ground or in low ill-ventilated apartments, or in the open air, depressing passions, fear of the disease, &c.

We have seen that exposure to atmospheric vicissitudes and fatigue were the exciting causes of the disease, when it occurred in the detachment under the command of Colonel Pearse, also in that of Colonel Cockerel, and that it likewise produced the cholera at Hurdwar. Abundant proof can be furnished that these same causes and those we have just indicated are active at the present mo-

* Madras Report.

† Bengal Report, p. 115.

ment, when the disease has assumed an epidemic character. Mr. Taylor in his report, states that at Bombay the disease was nearly restricted to that class of the population which was most exposed to the severest labour and privation.* In Mauritius, according to Mr. Corbin, by far the greater proportion of the seizures took place in the laborious classes of the population.†

“Of all the circumstances,” says Mr. Kennedy, “predisposing to an attack of cholera, fatigue consequent to travelling, or to hard work in the open air, was the most powerful. Accordingly we find that troops upon the line of march, and people whose occupations exposed them to the weather—as boatmen, fishermen, husbandmen, gardeners, grass-cutters, washermen, palankeen-bearers—were extremely subject to the disease.” p. 223.

“During the early progress of the cholera, large bodies of troops, though in good health previously, seldom performed a march in Hindostan without being attacked.” p. 248.

MM. E. Le Gallois and E. Brière de Boismont state that the individuals attacked by this pestilence at Warsaw, generally belonged to the lowest class.‡ Their condition was miserable, their wants extreme. Their nourishment was bad and very indigestible, their houses filthy and ill-ventilated. Drunkards, debauchees, all those who committed excesses, those exhausted by diseases, the weak and aged, succumbed in a short time. Three drunkards after an orgie perished in the space of four hours, and a drunken servant in the hotel where MM. G. and B. lodged was found dead in his bed.§

Dr. Gibbs says that at St. Petersburg the disease could in almost all cases be traced to eating flatulent and crude vegetables, as cucumbers, melons, radishes, &c. of which the Russians are so fond; the use of ardent spirits, and afterwards drinking iced water, or quass, their common beverage, well-iced, and this during perspiration.||

The rapidity with which it often destroyed its victims is one of the remarkable characters of cholera, in some cases extinguishing life with almost the rapidity of lightning. At Bellamy, in India, a tailor attacked with the disease whilst engaged at his trade, is said to have instantly expired with his work in his hands, and in the very attitude in which he was sitting. A merchant, whilst in the act of closing a bargain for some tubs of sugar-candy, was suddenly seized, vomited twice, and expired. At Mecca the invasion of the disease was almost instantaneous. Individuals in perfect health were stricken to the earth, vomited, became cold, and died on the spot.¶

* Kennedy, p. 73.

† Med. Chir. Trans. Vol. XI. p. 148.

‡ It was the same in Moscow, according to Dr. Jaehnichen.

§ Gaz. Med. July 8, 1831. || Ed. Med. and Surg. Journ. April, 1831.

¶ Letter from the French Consul General in Egypt. l. c.

It does not, however, usually terminate fatally in less than from six to twenty hours, and not unfrequently it runs a longer course.

The estimates which have been formed of the total mortality that has attended this scourge, rest upon data too vague to permit us to place any great reliance upon them: yet the supposition that it has destroyed upwards of fifty millions of human beings within the last fifteen years, awful as such a mortality certainly is, seems not to be altogether incredible, when we consider the great fatality that has sometimes attended it. We have seen that in a few weeks it destroyed at Jessore six thousand persons: at Allahabad it numbered ten thousand victims: in Mysore the same number; at Benares fifteen hundred perished in two months: and in the district of Gorreapcore thirty thousand died in half that time. In Java it is said to have destroyed one hundred and two thousand: in Bangkok, Isle of Siam, forty thousand; in Pekin the mortality was so great in 1822 that the government was compelled to bury the dead. At Bassora it numbered eighteen thousand victims, of whom fourteen thousand died in two weeks, out of a population of sixty thousand; in Muscat, and its environs, it destroyed sixty thousand; at Mecca, in 1831, twenty thousand pilgrims perished.

We have not sufficient data to enable us to ascertain its comparative mortality; indeed it has exhibited great variety in this point; at times its fatality being extreme, at others scarcely greater than ordinary fevers. Thus, the family of a wealthy Nair, in Travancore, consisting of nineteen persons, were all, save one, cut off by it in a few hours. Another family of five all died. Mr. Searle stated that at Manantoddy of twenty-eight villagers attacked with it twenty-six died.* We have seen that it decimated the Marquis of Hastings' army. At Mecca, of fifty thousand pilgrims assembled there last May, twenty thousand perished. In the city and suburbs of Orenburg, containing eleven thousand inhabitants, eleven hundred were attacked, of whom two hundred died. At Moscow the mortality varied greatly at different periods, being at first as high as nine-tenths of the cases, afterwards it gradually sunk to a half, and at last to a third. At Vienna, where the disease appeared in September, out of a population of three hundred and twenty thousand only one thousand three hundred and sixty had died up to the 24th of October. In Berlin and Hamburgh the proportional mortality is said to have been less.

The rate of travel of the disease over the countries it has visited has not been every where the same, but has been influenced by circumstances not as yet ascertained. Thus it was from the 20th

* Madras Report.

of March to the 14th of November, in its passage from Ganjam, latitude $19^{\circ} 20'$, to Cuddalore, latitude 11° , travelling the distance at the rate of rather more than two miles a day. It traversed the peninsula of India east to west, from the Bay of Bengal to the Bay of Cambay, a distance of thirteen hundred miles, in one year, being at the rate of nearly four miles a day. From the south of the Caspian, along the Volga to Twer, a distance of upwards of fifteen hundred miles, it passed in two months and a half, or at the rate of more than fourteen miles a day.

Traversing, as we have seen that the disease has done, through various countries between the latitudes of 20° south and 65° north of the equator, and in longitudes through upwards of 100° , it must necessarily have encountered every variety of climate, without its powers of spreading being destroyed. Nevertheless, cold seems always to have impeded and generally to have arrested its march. The only striking exception to this rule is its prevalence in Russia during the depth of winter, and this exception, according to Lichtenstadt, is more apparent than real, at least in Moscow, since he says it attacked those only who lived in hot stove rooms, and enveloped in furs, were always in an atmosphere of summer temperature.

Another fact in the history of this disease must not be overlooked; it is the shortness of its visitations. When appearing in a town or among a large assemblage of persons, it spread with extreme rapidity, and in general ran its course in the space of a few weeks, and then disappeared. It did not, however, entirely die away. Once in possession of a soil, it generally took root there, and only waited for some favourable opportunity to germinate afresh. Thus Calcutta has suffered from it every summer since its first appearance in 1817; Bombay has been invaded by it twelve times; and at the moment we are writing this, we learn by an arrival from India, that it had broke out on the 5th of June last at Benares, a large town on the Ganges, and has been raging since then with extreme violence.

Cholera, we have seen, has always been endemic in India, and suddenly acquired, in 1817, an epidemic character. The causes which invested it with this character seem to be still a mystery. Indeed, the origin of most general pestilences is as yet an unsolved problem in medical science. They have usually, however, been preceded by some unusual atmospheric phenomena, and the one under consideration forms no exception to such a rule. It is indeed said by Dr. JOHNSON, in his work on the diseases of India,* that the cholera com-

* Fourth ed. p. 275.

menced without any previous peculiarities in the weather, and this statement has been repeated by many subsequent writers. Dr. HAWKINS gives it as a generally admitted fact. This is, nevertheless, the very opposite to the truth. Dr. Jameson and Mr. Annesley, both of whom had the most ample means of obtaining information, assert that the seasons preceding the appearance of the epidemic were unusually disturbed, and remarkable for atmospheric vicissitudes. Mr. SCOTT, in his Madras report, also speaks of the marked intemperature of the seasons preceding and accompanying the appearance of the disease.* It appears from Dr. Jameson's Bengal report, that for some years before the epidemic cholera made its appearance, there had been excessive heavy rains, great droughts, storms, and earthquakes. During the rainy season of 1815, the fall of rain was excessive; the Ganges, the Soane, and Coossee rivers burst their boundaries, producing great destruction. The cold season that followed was damp, unpleasant, and exceedingly foggy. On the other hand, the hot season of 1816 was distinguished for drought and intense heat, which was tempered with but few breezes and little or no rain. On the 15th of April a shock of an earthquake was felt at Calcutta. Towards the end of May, the thermometer had risen to the unusual height of 98° in the shade; and under the effects of this oppressive heat many persons, European and native, fell down dead in the streets. This dreadful sultry weather continued, until interrupted on the 14th of June by the commencement of the rains. During the remainder of June and during July there were moderate rains, and a second shock of an earthquake was felt in the latter month. In August the showers became rare, and the days and nights oppressively hot; in Calcutta and in the western part of the province, the drought that succeeded was so uncommon as to dry up the rivers. On the 8th of September this drought was suddenly succeeded by a deluge of rain which continued throughout the month, and occasioned a deeper and more general inundation than had happened at any period within the recollection of the oldest inhabitants.

The morbid effects of this anomalous weather soon showed itself, and instead of the inflammatory affections which usually presented themselves, the only diseases met with were low fevers, and other disorders of the typhoid character; among others, the "malignant sore throat," hitherto unknown in that portion of the globe, except by name, made its appearance.

Bilious remittent fever soon became prevalent, and before the end

of August was raging epidemically in almost every town between Patna and Saharempore, and continued to prevail until the cold weather in December. The disease attacked equally Europeans and natives, and the mortality was very great. Of numerous native villages the whole population was ill at one and the same time: the banks of the river were at all times covered with the dead and dying. The eighty-seventh and sixty-sixth regiments at Cawnpore lost nearly four hundred men; the former corps is said to have had five hundred and nineteen in hospital at once, and to have buried twenty-one persons, (including women and children.) in one day. In Upper Hindostan the horned cattle were very sickly, and their bodies in vast numbers were to be seen strewed in the pastures.

The ensuing cold season was raw, damp, and unpleasant.

The deviations from the ordinary course of the season, during 1817, were as marked as those of the preceding year. February, instead of being dry and cold, was very rainy, as was also March. On the 21st of the latter month, a violent thunderstorm was experienced followed by hail and torrents of rain, which destroyed the blossoms of all the mangoe and other trees then in bloom, and severely injured the spring crops. The thermometer ranged from 68 to 82°. Among the Europeans chronic dysentery and rheumatism were the prevailing complaints. On the 30th of the month a soldier of the fifty-ninth regiment at Fort William, Calcutta, was attacked with cholera, and died in thirty-six hours. No other case at that time occurred, and there was nothing observed remarkable in the weather, or the health of the population, until the 25th of May, when the rains commenced, which was fifteen or twenty days earlier than usual. In every part of the Gangetic Delta the descent of heavy rain was long and uninterrupted, and nearly the whole country, especially in the lower division of the province of Bengal, was one sheet of water before the middle of August. Lakes and tanks that in former seasons had remained nearly dry for a considerable time were now filled to overflowing, and remained so for a comparatively long period. The measure of the rain was estimated at one hundred and twenty inches, one-third more than the usual quantity.*

Cholera, which has already been stated to be endemical in Bengal, and to prevail more or less at certain seasons, was of more common occurrence during the first six months of 1817, than in former years. It prevailed among the natives in an unusual degree in May and June in several parts of Nuddea and Momensing, and in other and distant

* Bengal Report, p. xlii.—lvi.

parts of Bengal, between which there had been no immediate inter-communication. By the middle of August it had assumed an epidemic character, and before the last of September it was prevailing throughout the whole province of Bengal. During the cool weather of November and December the disease gradually died away, and became nearly extinct in January.

The succeeding year, (1818,) was similar to its predecessor. There were excessively heavy falls of rain, especially in the upper provinces, and sudden vicissitudes. On the 19th of February, the wind settled to the south and the hot season set in; on the 25th there was a north-wester, and on the 27th and 28th much rain. Immediately on the occurrence of this sudden change in the weather, the cholera revived and raged with indiscriminate violence among the natives; and at the end of the following July, it equally affected Europeans.

It has been supposed by some persons, that as it was during the wet season of the year, that the disease had been endemic; and as since becoming epidemic, its appearance has been influenced by the weather—breaking out in spring, abating in winter, and becoming aggravated by atmospheric vicissitudes—that these causes are sufficient to explain its occurrence, wherever it has prevailed. That the excessive rains and atmospheric variations we have noticed, were circumstances exceedingly favourable to the occurrence of the disease, is extremely probable; but whether they were sufficient to endow the disease with its epidemic character, may certainly be questioned.

The regular progress of the disease—its prevalence in every climate from 20° south latitude, to 65° north, alike in the tropical regions of India and the frozen regions of the White Sea—its appearance under every possible variety of season, heat, cold, dryness, and moisture; raging in Benares, Bundelkund, Oude, and the southern districts of the Doab during the dry months of the hot weather, whilst it did not appear in Delhi, in Meerut, or in Jeypore and the tracts in their vicinity, until the rains had set in, and the air was loaded with moisture; attacking, of five camps, the centre division in the cold season, the Nagpore and Saugur division in the height of the hot winds, and the Rajpootana and Kurnaul divisions whilst it poured down rain—and its occurrence equally in the low and marshy Delta of the Ganges, and on the dry and elevated plain of Orenburg, show that it cannot depend *solely* either upon heat or cold, dryness or moisture. The fact that atmospheric vicissitudes are among the common *exciting* causes of the disease, has no

doubt led to the error of ascribing its essential cause to sensible changes in the weather, but as these have always occurred without previously inducing the disease or even doing so at the present time,* it is evident that we must look to something else as the means by which the disease is propagated.

This, according to a pretty numerous party, especially in England, is to be found in the existence of a specific contagion, generated in 1817. Those who are of opinion that the disease is propagated in this way, have offered various circumstances in support of their belief. They assert that the disease has always followed the highways of human intercourse, the great roads and navigable rivers, that it follows the track of armies and caravans, and that its importation from one place to another could often be directly traced. That bodies of troops in motion have been attacked and have retained the disease, while it was unknown to the fixed inhabitants of the country through which they passed, and that when it is once established in a marching regiment, it continues its course in spite of change of position, food, and other circumstances. That the relations who have attended on persons ill of cholera, as well as the nurses appointed in military hospitals for that duty, and in general those whose employment has led them to be much with the sick, have been observed in very many instances to be attacked with the disease, during or shortly

* The Nagpore subsidiary force, whilst conducting the siege of Chandah, during which the troops were exposed to the great heats of the day under a range of stony hills, and often without shelter, to the dews of night, had not a case of the disease. On the 30th of May a detachment returned to Nagpore, where the disease was prevailing, and took possession of certain huts near the Sittabuldee hills, which they had formerly occupied. Though previously in good health, they had scarcely taken possession of their quarters when it appeared among them in a violent manner. The first day only one individual was affected; but on the 31st it appeared with great violence and fatality; on the 1st of June the attacks were very numerous; on the 2d it declined, and after the 10th rarely appeared. In a detachment of this force left at Hingumghat, fifty miles south of Nagpore, it appeared at the same time, and followed the same course. The left division of the army had been almost constantly moving from the beginning of March, and in the latter part of that month, and the first week in April, had undergone great privations and fatigue whilst conducting a heavy train of artillery, and a numerous convoy of carts, in the cold of the night, and great heats of the day, through a mountainous and difficult country. Yet they felt nothing of the epidemic until they, on the 9th and 10th of April, reached Jubbulpore, in which town it had been raging several weeks; from which period they became numerously affected. So many similar cases have occurred that they can hardly perhaps be ascribed to mere coincidence. *Bengal Report*, p. 89.

after their attendance. That the sick in hospitals labouring under other diseases, have likewise been observed to be attacked with cholera, especially those who lay near patients ill with that disease. Mr. Hawkins* says, that in India “the disease was *probably* communicated from one person to another, and that in Europe it has *undeniably* proved so.” He further asserts, that insulation or separation from the sick, is almost universally found to preserve from the evil.†

This certainly presents a pretty strong *prima facie* case of contagion. But let us examine the alleged facts upon which these assertions have been based, and see whether they will bear investigation.

There appears always to have existed, among the inhabitants of every place, an unwillingness to believe that a pestilential disease could originate among themselves—such circumstance being considered as extremely disreputable, and hence attempts have always been made to trace its origin in, and importation from, some less favoured spot. Thus, in the case of yellow fever, for a long time the idea of its originating among ourselves was repelled with indignation, and its introduction attributed to importation from the West Indies. There appears, however, to have been no lack of this particular kind of *amor patriæ* in these latter islands; and their inhabitants have equally refused to admit its origin among themselves, and insist that it must have been imported from Africa. We know not what the poor African says on this subject, but have no doubt that its importation from some other place is equally satisfactory to him.

As regards cholera, the doctrine of importation was early resorted to to explain its appearance. Thus, it was at first said to have been imported into Calcutta and other places in Bengal from Jessore, until on investigation it was proved by the most conclusive testimony to have occurred nearly simultaneously in various parts of the province, between which there had been no immediate intercommunication. But let us examine into some of the special cases in which the importation, it is said, could be traced.

The disease was imported into Mauritius, say the contagionists, by the frigate *Topaze*, which sailed from Ceylon while the disease was raging there. The former island is distant upwards of two thousand miles from the latter, or from any place where cholera was prevailing at the time. On the passage seventeen cases of cholera appeared on board the *Topaze*. “The frigate,” says Mr. Kennedy, “arrived in the harbour of Port Louis, the 29th of October, 1819, and it was not until the 18th of November that the cholera began to

* P. 165.

† P. 151.

spread among the inhabitants. The people, therefore, were naturally led to suspect that the malignant form of the disease had been imported by the *Topaze*." The public opinion will hardly be admitted as proof in this case, especially as it is in direct variance with that of the medical officer. It appears, from the report of Dr. KINNIS,* that a case of cholera occurred on the 5th of September, and another the following day, whilst the *Topaze* did not arrive until the 29th. That the thirty patients sent from the ship to the hospital were cases of chronic dysentery, hepatitis, and general debility. He further states, both on the authority of the surgeon of the ship, and from personal observation, that not one of these patients laboured under symptoms of cholera at the time of disembarkation, and that not a soul on board the *Topaze*, which lay about a mile and a half from the shore, but constantly communicated with it, was attacked after her arrival. The disease, moreover, did not break out among the nurses or the other patients in the hospital where these men were lodged, but among the African slaves and convicts. It was not, of course, conveyed into the town by the patients. If the clothes of the crew were imbued with the infection, as the contagionists assert, they should show that the disease broke out among those who visited the vessel, and explain how, of a whole frigate's crew, but seventeen should be affected; yet should convey the infection to others. We are not informed when the frigate left Ceylon, at what period of the voyage the disease occurred, when it ceased on board; nor are we furnished with many other important particulars to establish contagion. For even admitting that the disease first appeared on the 18th of November, twenty-one days after the arrival of the *Topaze*, it is far from following, that the disease was imported by that frigate; for it is pretty well proved, that the period at which the disease shows itself, after being exposed to the supposed virus, rarely, if ever, exceeds four or five days, and it is not contended, we believe, that the supposed infection can remain for a much longer time in garments.

It must then be admitted, that at least *no proof* of the disease being imported by the *Topaze* has as yet been adduced.

The story of the introduction of cholera into Astrachan is so vague that little can be said in relation to it. It is stated in the report of Dr. Solomov, that the disease first appeared on the frontiers of the Astrachan government on the 3d of July, on board of a ship of war which had arrived from Baku, (three hundred and fifty miles down the Caspian,) and lay *sixty miles from Astrachan*. Till the 20th of

* Hawkins, p. 264.

the month the disease was confined within the Sedlitooski lazaretto, whither the vessel with the sick had been brought. But on that day four people were taken ill in the city, near the river Kutum, and from this point the disease *imperceptibly* spread over the whole town.* Now there is certainly nothing, so far, to prove that the disease had been imported, and here the relation stops, without even the attempt to show that the slightest intercourse took place between the individuals simultaneously attacked and the sick at the lazaretto; indeed we have no information furnished us of their having ever been nearer than within sixty miles of each other.

After a careful investigation of the supposed introduction of the disease into Orenburg by the caravans which arrive from Central Asia about midsummer, it was found impossible to attach any plausibility to that notion. The last caravan that arrived at Orenburg, reached that place on the 22d of July, thirty-five days before the first case of cholera occurred there; the individuals composing it were all in good health, and in crossing the steppes, which is accomplished in from thirty-three to ninety days, they lost only one companion, whose disease could not be ascertained, but who died after being twenty days ill, and therefore it could not have been of cholera. Now it is entirely admitted by the contagionists, that the period at which the disease occurs after exposure rarely exceeds three days,† and that at most it does not exceed a week. It is consequently entirely clear that the disease could not have been introduced by the persons belonging to the caravan. It is scarcely less certain that it could not have been introduced by the goods conveyed by them; since at every resting place it is the practice of the merchants to unpack their merchandise, so that they must have been freely exposed to the fomites had there been any; yet none of them were taken ill. Besides, the Bucharian merchants and their attendants, laughing at the suspicions of the physicians, exposed themselves in every possible way to the exhalations from their packages. Neither could it be discovered that any person in Orenburg was attacked by the cholera, who had purchased goods of a suspected nature brought by the caravan. When to these facts it is added that the cholera did not appear at Orsk or Troitsk, two other frontier towns, where the eastern caravans also arrive during summer, it is evident that importation in this manner is out of the question.‡

The introduction of the cholera at Orenburg was ascribed by some

* Lichtenstadt.

† Kennedy, p. 215, 232.

‡ Edinburgh Medical and Surgical Journal, xxxvi. Lichtenstadt.

of the inhabitants to another source. They attributed it to the Kirghis-Kaisaks, from whom the government of Orenburg is separated merely by the river Oural. The following remarks of Dr. Sakolov on this subject appear conclusive:—

“Finally,” says he, “the introduction of cholera into Orenburg has been ascribed to our neighbours of the Steppes, the Kirghis. Their intercourse with Taschkent, Bucharia and Chiwa is well known; so that if the disease was introduced into any of these districts from Caubul or Khorasan, it must have been communicated to the Kirghis. Their own accounts, too, though discordant in many respects, supply clear, convincing proof that cholera has shown itself in some of their hordes on the Ilek and Emba, (the former of which streams joins the Oural from the south-west, a little below Orenburg, while the latter river runs parallel to the Oural at a distance of about eighty miles, and flows like it into the Caspian.) But their constant distrust of us, and their suspicious closeness are a great obstacle to our procuring distinct evidence of the form and extent in which the disease prevailed in this wandering semi-barbarous race.

“Besides, it is their constant custom to abandon all those to their fate who are sick or suspected to be ill, (for example, of small-pox, measles, or inflammatory fever,) and to wander to a distance from any place where such diseases have shown themselves,—which is in fact the most effectual means they could take to check their dissemination, and serves equally to lessen the number of victims, and to withdraw them from observation. Along our whole confines the Kirghis are constantly employed bartering goods with us during the summer and harvest, their principal articles of commerce being sheep, camblet, felt, and skins. But if the Chiwa and Bucharian caravans could not have introduced cholera into Orenburg, because it was actually never introduced into Orsk and Troitsk, how was it possible for the Kirghis to introduce it into Orenburg, without also introducing it into the numerous stations on the frontiers with which they maintain an equally constant intercourse” p. 123.

Thus the notion that the disease was introduced into Orenburg by importation, appears utterly improbable; at least the strictest investigation has failed in discovering any thing that could favour such an opinion.

The disease, it has been said, was introduced into Riga in a package of hemp, and it is asserted that fifteen labourers who opened it were attacked with the complaint; others attribute the introduction to the barques.

The statement of fifteen labourers being attacked at Riga, while opening a pack of hemp, the British consul asserts to be a notorious falsehood. As to its introduction by the barques, let us hear what he says on that subject.

“It is impossible” he observes “to trace the origin of the disease to the barques; indeed it had not manifested itself at the place whence they come till after it had broken out here. The nearest point infected was Schowlen (at a distance of 200 wersts,) and it appeared simultaneously in three different places at Riga,

without touching the interjacent country. The first cases were two stone-masons, working in the Petersburg suburbs, a person in the citadel, and a lady resident in the town. None of these persons had had the slightest communication with the crews of barques, or other strangers, and the quarter inhabited by people of that description was later attacked, though it has ultimately suffered most."

The cholera was imported into Dantzic, say the contagionists, by a vessel from Riga, the captain of which ship died the day of his arrival; afterwards the cholera gradually extended itself first to the port, next to the suburbs, and subsequently to the city; and further to prove its contagious nature, it is added, that the neighbouring places have been preserved by a cordon sanitaire. This story, if true, would at once determine the question of contagion; and it appeared so important in relation to the settlement of that point, that Dr. DALMAS, a member of the medical commission, sent by the French government to Warsaw, determined to go himself to Riga to investigate the subject. In a letter to Dr. BLANDIN, published in the *Journal Universel et Hebdomadaire de Médecine et de Chirurgie Pratiques*, &c. for November last, Dr. Dalmas states, as the result of his investigations:—

"1st. That the cholera did not exist at Riga at the period of the sailing of the vessels accused of conveying the disease. 2d. That the cholera did not appear on board any of them during the voyage. 3d. That the cholera appeared at Dantzic before their arrival, and that it broke out in the town before it appeared in the port; and lastly, the cordon sanitaire did not protect the neighbouring places.

"It would occupy too much space," he adds, "to detail all the proofs of what I advance, but I will indicate them to you.

"It results from authentic documents, of which I have certified copies, that it was not until the 30th of May, that there arrived in the roads, loaded with articles for the Russian army, the first four ships, viz. the *Minna*, Captain Brandt; *Joh. Maria*, Captain Stooock; *Stoffmung*, Captain Saag; *Unga Neptunus*, Captain Lilya. The two first were signalled the 30th of May, at 5 A. M. five leagues to the east. The captains were furnished with regular, clean bills of health. Finally the healthy state of their crews was ascertained in the most satisfactory manner by Dr. Mathy. On the other hand, after the most scrupulous researches, it has been proved that no other vessel or boat from Russian ports had arrived any where within the circle of Dantzic. In admitting, against all justice, that the bills of health and the report of the physician who visited these vessels are not to be depended on; as these four vessels are the first that appeared in the roads, it is impossible that the disease could have been imported before the 30th of May, the day on which it is true that Capt. Brandt died, after a few hours illness, probably from cholera, but which is not perfectly certain. But it is proved, officially avowed, demonstrated, that three cases of the disease occurred on the 27th of the month, on shore. These were three workmen on board a boat, engaged in cleaning out the port. Sent to their village, two of them died, one on the 25th, the other on the 31st of May; the third recovered. Their name, that of their village, and the other particulars are known.

"It is then certain that the cholera appeared on shore before the arrival of the first vessels. The cases just noticed are alone sufficient to prove it; but I go further, and say that the disease occurred previous to the 27th, and in the city moreover. To prove this, I have no official documents; but physicians, respectable from their learning, and entertaining different opinions respecting contagion, are unanimous on this point, that several days before the 27th, persons were attacked with cholera, in Dantzic. On the 21st, Dr. Baum received and prescribed in the hospital for a patient, who soon died. I have read the manuscript account of the case and post mortem examination; it was evidently a case of cholera. Drs. Geisler and Gnasscheke have met with similar cases; finally, I have been positively assured, that in the early part of the week, ending the 28th, there were many cases of death after short illnesses, from causes respecting which the physicians were not at first agreed, when the cases of the 27th settled their opinions. The cholera then appeared first in the city.

"Another fact, still further disproving all idea of contagion from the goods imported from Russia is, that not one of the labourers employed in discharging one hundred and ten ships, which subsequently arrived, were affected.

"Finally, it is false that the cordon prevented the propagation of the disease to the environs; for it appeared many days before the cordon was removed, at Esling, Marienburg, Stutgard, and at Derschaw."

The importation then, by sea, adds Dr. Dalmas, is entirely fabulous.

MM. BRIERE DE BOISMONT and LEGALLOIS, were who sent to Russia by the Polish committee, give the following account of the first appearance of the cholera in Poland.

The disease, say they, made its first appearance in Poland on the 10th of April, 1831. It particularly affected the soldiers fatigued by painful marches, prolonged bivouacs, who were exposed to the tempestuousness of the seasons, and observed no hygienic rules. Thus it selected for its attacks the regiments which were encamped between two mountains upon a swampy prairie, and the soldiers of which had little else for food than pork. The days preceding the appearance of the malady were warm, the thermometer being 19° and 20° Ream.; the nights on the contrary, were cold and moist. After the battle of the 10th, at Iganie,* which was long and bloody, the Poles, heated by a forced march, and the length of the action, greedily drank of the muddy water of this marsh, until they were gorged; and by the night of the 12th-13th, many of them had already expired.†

The reader may judge for himself how far importation is made out in this instance, and whether the appearance is not equally explicable by the theories presently to be discussed.

* It should be mentioned that cholera prevailed among the Russian troops.

† Gazette Med. July 8th.

It must not be concealed that there are several other instances of importation related by different writers. Thus it is stated in the Bombay reports, that a man who left Panwell whilst the disease was raging there, had arrived at Bombay and was soon after attacked by the disease and died, and that on the day following his wife and the wife of the man, who lived next door, and almost immediately afterwards two near neighbours were affected, all of whom fell victims. Several cases afterwards occurred in the lane where these people had lived, and afterwards cases occurred in *different parts* of the town. Several cases of a similar kind are related in the Russian official documents. Thus it is said that a vintner's servant was attacked in the fortress of Raziupna, the day of his return from Orenburg, and that four days afterwards several of the garrison were affected. It is also stated that the disease first appeared in the fortress of Iletsks, soon after the arrival of a soldier and a soldier's wife, who were taken ill on their way from Orenburg, and died the day after their arrival at Iletsks. Three days afterwards three individuals were attacked in the garrison with the disease, one of whom was the husband of the woman.

It is impossible for us, remote as we are from the scene of these alleged occurrences, and a few others of a similar character which might be adduced, to disprove or confirm their accuracy. We can only say that, with scarcely a single exception, they are related in so loose a way, and are so deficient in important details, that they can hardly be received as evidence, much less as proofs of contagion. Moreover, in opposition to these, the contagionists adduce many instances, where the first cases which have occurred in a town are known, and in which it is impossible to trace its derivation from any external source. Thus in Moscow, where the police is remarkable for their activity, Dr. Jaehnichen informs us that the most minute and exact researches most incontestibly prove that the disease was not imported into that city, but that it developed itself spontaneously. Dr. WALKER, a believer in the contagious nature of the disease, confirms this. He states that, "a strict investigation had been made into what were considered the first four cases occurring in Moscow, and that it proved that they had neither themselves been in any infected place, nor had communication with any one coming from such place."*

It has been equally impossible to trace its introduction into Sunderland. Mr. PENNMAN, the surgeon to the Sunderland Infirmary, in his letter to the American consul, states, "we have no evidence of

* Hawkins, p. 249.

its being imported, and the prevailing opinion is, that it is not infectious." Dr. Brown, in a letter to Drs. Johnson and Tweedie, makes the same statement.

Let us now examine some of the other arguments which have been adduced in evidence of the contagiousness of the disease.

The disease it is said has often appeared to progress by the great roads and channels of human intercourse. This may be true, but it has not always done so. Surgeon MITCHELL, in his report from Palamcottah, says, "as far as I can learn, the cholera appears to have made its approaches by neither of the great roads. Commencing its ravages here to the eastward, a little north of the fort, it spread pretty generally through the small, low, dirty houses in every direction. The hospital seems to have escaped, probably because the building stood upon high and open ground."

It appears also that we cannot always trust to the accounts of the limitation of the disease to the great thoroughfares.

Mr. Bell observes, "when travelling on circuit, I have found the disease prevailing in a district *before any report had been made of the fact, notwithstanding the most positive orders on the subject*; and I am persuaded that were any of the instances adduced in support of the statement under consideration, strictly inquired into, it would be found that the usual apathy of the natives of India had prevented their noticing the existence of the disease, until the fact was brought prominently forward by the presence of Europeans. It should also be borne in mind, that cholera asphyxia is not a new disease to these natives, but seems to be in many places almost endemic; whilst it is well known, that strangers, in such circumstances, become more obnoxious to the disease than the inhabitants of the country. Moreover, travellers have, superadded to the remote causes of the disease, fatigue and road discomforts, which are not trifling in a country where there are neither inns nor carriages." p. 89.

But even if it be a fact that the disease is principally restricted to the high roads and navigable rivers, it is there that men collect in the largest masses, that we find the most crowded and filthy dwellings and the most wretchedness, in short, the situations most favourable for its production and the description of persons among whom the disease has always selected its greatest number of victims.

Where the disease appeared to follow the track of the various caravans, there is no mention made of the distemper having existed in these travelling communities, and it is admitted that had it prevailed among them it could not have been concealed from the European consuls, and that, therefore, the coincidence of the eruption of the malady, and the arrival of the caravan, must be accounted for on the only hypothesis left, namely, that the cholera was propagated by the goods which were transported from infected places. Now, this as-

sumes as a fact what is still to be proved, namely, that the supposed infection can be conveyed in goods. We have seen that the Bucharian merchants and their servants exposed themselves freely to the exhalations from their goods with impunity, and that it was impossible to trace the disease to any one who purchased goods of them at Orenburg, and no evidence has been offered to prove that elsewhere those who purchased goods imported by caravans were the first to be attacked with the disease.

In the report of the extraordinary committee of physicians assembled at Moscow, it is stated that eighteen members of the provisional medical council are of opinion that the cholera cannot be communicated by means of goods and merchandise, and that only three are in favour of it, and that the opinion of the minority destroy themselves—offering many contradictions, and not corresponding to known facts. And they further state, that “convalescents have continued to wear clothes which they wore during the disease, even furs without being purified, and they have never had a relapse.”*

Dr. Albers, in his report to the Prussian government, says that it is completely made out by testimonies innumerable, “that the cholera is not communicated by articles of merchandise, or by any inanimate objects.”

Dr. Walker says that no cases have as yet come to his knowledge sufficient to prove the possibility of the disease being communicated by clothes or goods.

Finally, Dr. Smirnov informs us that the women who washed the clothes of the patients in the hospital at Orenburg, and who could hardly have escaped, were there any infection to be conveyed by such articles, were entirely exempt from the disease.†

If bodies of troops in motion have, as is asserted, been attacked with the disease whilst it was unknown to the fixed inhabitants of the country through which they passed, it seems not at all inexplicable, when we consider that they are exposed to the avowedly predisposing and exciting causes of the disease. But the following extract from Mr. Bell's Journal will show that the assertion in question rests on no very solid foundation.

“In July, 1819, I marched,” says Mr. Bell, “from Madras, in medical charge of a large party of young officers who had just arrived in India, and who were on their way to join regiments in the interior of the country. There was also a detachment of sepoys, and the usual numerous attendants and camp followers of such a party in India. The cholera prevailed at Madras when we left it. Until the fifth days' march, (fifty miles from Madras, no case of the disease occur-

* Hawkins, p. 284.

† Lichtenstadt.

red. On that day several of the party were attacked on the line of march, and during the next three stages we continued to have additional cases. Cholera prevailed in the country through which we were passing. In consultation with the commanding officer of the detachment, it was determined that we should endeavour to leave the disease behind us; and as we were informed that the country beyond the Ghauts was free of it, we marched without a halt until we reached the high table land of Mysore. The consequence was, that we left the disease at Vellore, eighty-seven miles from Madras, and we had none of it until we had marched seventy miles farther, (seven stages,) when we again found it at one of our appointed places of encampment. But our camp was, in consequence pushed on a few miles, and only one case, a fatal one, occurred in the detachment. The man was attacked on the line of march. We again left the disease, and were free from it during the next hundred and fifteen miles of travelling. We then had it during three stages and found many villages deserted. We once more left it, and reached our journey's end, two hundred and sixty miles farther, without again meeting it. Thus, in a journey of five hundred and sixty miles, this detachment was exposed to, and left the disease behind, three different times, and on none of those occasions did a single case occur beyond the tainted spot." p. 90, 91.

The evidence adduced in favour of the infectious or contagious quality of cholera, as it respects the intercourse between individuals, is thus summed up by Mr. Scott in his Madras report, p. xlix.

"The relations who have attended on people ill of cholera, as well as the nurses appointed in military corps for that duty, and, in general, those whose employment has led them to be much with the sick, have been observed in very many instances, to be attacked with cholera, during or shortly after their attendance.

"The sick in hospital, labouring under other diseases, have likewise been observed to be attacked with cholera, especially those who lay near the patients ill with that disease. Sometimes whole families have been swept off successively. Servants have often been observed to sicken after attending their masters."

The whole current of medical testimony, however, goes to prove that the disease was not propagated from patients to their medical attendants, or to those who were previously in hospital, and labouring under other diseases.

It would be indeed strange if physicians and nurses, who from the extreme fatigue and loss of rest which they undergo, are peculiarly predisposed to the disease, did not sometimes become its victims; and it is therefore a remarkable fact that the proportion who were affected is so small.

Dr. Jameson states that of between two hundred and fifty and three hundred medical men engaged in practice in Bengal, but three took the disease.* He further observes, that at Nagpore the medical

* Bengal Report.

staff remained for several days, night and day, in the hospital, and yet all escaped.

At Bombay none of the hospital attendants were attacked, though they were assisting the patients day and night.*

Surgeon JUKES, in his report, says, "neither myself, nor any of my assistants who have been constantly amongst the sick, nor any of the hospital attendants, have had the disease."†

In the hospital of the Royals, says the Madras report, only one individual, out of one hundred and one attendants, was attacked.

In the general hospital, it is stated, upon the authority of assistant surgeon WHYTE, that the friends and relations of the sick, who, by assisting the patients into and out of the bath, and every other way, were thereby exposed to be attacked by the disease were it communicable by touch, or through the medium of an infected atmosphere, in no instance were affected, neither were the dooly bearers nor hospital assistants.‡

Mr. Deputy Inspector FARRELL, in his report, states, that—

"It was observed that attendants on the sick, or persons resident in the same house, or even in the same ward of an hospital, with patients labouring under it, were not more liable to its attacks than others differently circumstanced. Indeed, it has been known to attack patients who had been admitted into hospital for other complaints, to have carried them off with its usual rapidity, and not to appear again in the same hospital, although it raged in all directions around it. These are strong facts, and if they do not disprove its contagious nature, they show, at all events, that it is propagated in a manner different from all known contagious diseases."§

At Berhampore none of the native attendants on the hospitals were affected.||

Dr. ALBERS, in his report to the Prussian government, says, that in Moscow—

"In many houses, it happened that one individual attacked by cholera was attended indiscriminately by all the relatives, and yet the disease did not spread to any of the inmates. It was finally found, that not only the nurses continued free from the distemper, but also that they promiscuously attended the sick chamber, and visited their friends without in the least communicating the disease. There are even cases fully authenticated, that nurses, to quiet timid females labouring under cholera, have shared their beds during the nights, and that they, notwithstanding, have escaped uninjured, in the same manner as physicians in hospitals have, without any bad consequence, made use of the warm water used a moment before by cholera patients for bathing."

* Ogilvy's Report. Kennedy, p. 57.

† Kennedy, p. 81.

‡ Med. Chirurg. Trans. xl. p. 143.

§ Hawkins, p. 263.

|| Trans. Med. and Phys. Soc. of Calcutta, Vol. IV. p. 277 and 280.

Dr. Walker corroborates this statement.

Professor Lichtenstadt states on the authority of Dr. SMIRNOV, staff physician at Orenburg, that during two months while the disease prevailed at Orenburg, and two hundred and ninety-nine patients were admitted into the military hospital, the personal attendants on the sick remained entirely exempt from the disease.

In the principal hospital at Riga there were seventy-eight persons employed, of whom two only were attacked with the disease, one of them, an *inspecteur de salle*,[†] and not on immediate attendance on the sick.*

M. CHAMBERET, one of the medical commission sent to Warsaw by the French government, stated to the royal academy of medicine, at their meeting on the 11th of October last, that of one hundred persons attached to the hospitals, one only had died.†

Mr. Scott adduces evidence to the same effect.

“The most striking instances of immunity from the disease, under the most intimate personal intercourse, will be found recorded in the original reports. In the hospital of the royal regiment, only one individual out of one hundred and one attendants was attacked with the disease. In that of the 11th native regiment at Vizianagram, as recited by Mr. McAndrew, p. 33, not one was seized, although their numbers would seem to have been great. In the hospitals at Trichinopoly no attendants were taken ill. Many medical officers appear to have slept in their hospitals without suffering any bad consequences. At St. Thomas’ Mount, where a general receiving hospital for patients with the cholera was established, and where the numerous attendants were people not at all accustomed to hospitals, not one of them was taken ill; yet it was not uncommon to see them using the bed-clothes of patients who had recovered or died. The same observation applies to the numerous receiving hospitals at Madras. Mr. Acting-surgeon Gibson, on reporting on a late attack, (April, 1823,) experienced by the 69th regiment at Wallajahbad, observes, I had ninety-two admissions, and increased the establishment of servants to double: I lived in the hospital amidst the sick day and night; and yet neither I myself nor any of the servants got the disease; but the hospital serjeant’s wife, living in a retired room, not near any disease, had a severe attack.”‡

The evidence to show that cholera patients have been introduced into crowded wards of hospitals, without that disease being communicated to the sick previously in the hospital, is equally conclusive.

Dr. Bell says that

“The military hospital at Dharwar, an oblong apartment of about ninety feet by twenty, was within the fort, and the lines of the garrison were

* Report of British Consul at Riga.

† Gazette Médicale.

‡ Madras Report, p. 1.

about a mile distant, outside of the walls of the fort. On two different occasions, (in 1820 and 1821,) when the disease prevailed epidemically among the troops of that station, while I was in medical charge of the garrison, but while no cases had occurred in the fort in which the hospital was situated, the patients were brought at once from their quarters to the hospital, which on each occasion was crowded with sick labouring under other disorders. No attempt was made to separate the cholera patients from the others. On one of these occasions, no case of cholera occurred within the hospital; on the other, one of the sick was attacked, but he was a convalescent sepoy who had not been prevented from leaving the fort during the day. The disease on each of these occasions was confined to a particular subdivision of the lines, and none of those residing within the fort were attacked.

"Here then were from twenty to thirty cases of cholera admitted, in the course of a few days, into the same apartment with from forty to fifty patients suffering from other ailments, yet not a single instance to countenance the notion of contagion occurred."

Of one hundred and fifty patients previously in the hospital at Berrampore, one only took the complaint. viz. the assistant apothecary.*

At Palamcottah, for want of room, the cholera patients were at first put among the other sick without infecting them.†

Dissections too, appear to have been made with perfect impunity. Dr. Jaehnichen says that he examined nearly fifty subjects who died of cholera, carefully inspecting the four cavities and often the course of the nerves and vessels, and that he and his assistants frequently wounded themselves without any ill consequences.‡ The same is stated by MM. Brière de Boismont and Legallois,§ and by the extraordinary committee of physicians assembled at Moscow.||

Dr. Foy, at Warsaw, inoculated himself with the blood of patients labouring under cholera, tasted their dejections, and inhaled their breaths without receiving the disease.¶

There appears indeed no direct evidence sufficient to prove that the disease was ever transmitted from one person to another by immediate communication. Dr. Walker himself, a contagionist, acknowledges that he could not learn that the contagionists in Moscow had any strong particular instances to prove the communication of the disease from one individual to another.**

At Jaroslavl the disease could not be traced from one to another, and very often, perhaps most frequently, only one in a family was attacked with it.††

* Transactions of the Medical and Physical Society of Calcutta, p. 277-80.

† Kennedy, p. 115. ‡ Page 25. § Gazette Médicale, June 25, 1831.

|| Hawkins, p. 284.

¶ Gazette Médicale, June 25, 1831.

** Hawkins, p. 250.

†† Ibid, p. 251.

At Riga the illness of one individual in a family generally, was not followed by that of others, except where the first case was fatal, and the survivors gave way to grief and alarm and mental agitation, which has been proved to be one of the principal agents in propagating or exciting the disease. Mercenary attendants were rarely attacked.

In the cholera which prevailed in the 14th and 47th British regiments, at Berhampore, the soldiers, native servants, and inhabitants of the bazar, were affected, whilst the officers, the gentlemen residents, and sepoys assembled in the same cantonment, and promiscuously mixed together, were exempt.

We will not weary our readers with further evidence on these points, but proceed at once to the consideration of another argument which has been offered in favour of contagion, namely, the protection afforded by insulation.

As Dr. Hawkins has collected nearly all that has been adduced to prove the efficacy of insulation in protecting from the disease, and is himself a firm believer in its contagious nature, we will let him speak for himself on this point.

"Wherever measures," says he, "were taken to prevent communication in the Russian dominions, there the disease has been totally checked, or has made but little progress. Petersburg has not escaped, because a strict quarantine has not been observed between it and Moscow. The Moravian colony on the right bank of the Volga, and several German colonies in the government of Saratov, around which the disease was violent, adopted the system of exclusion, and were also unhurt. At Caramala-Gubeewa, some Russian peasants, living together, scarcely a hundred yards from the village, shut up their hamlet on the first report of the disease having appeared in their vicinity, and by enforcing a strict quarantine during the prevalence of the epidemic, remained in health. The large establishment composing the academy of military eadets, at Moscow, was preserved by a similar plan from the scourge which was so active on all sides of it.

"Can we have a better proof of the contagious nature of the disease than that *insulation*, or separation from the sick, is almost universally found to preserve from the evil? Mr. Gomba, the French Consul at Teflis, in Persia, a person who probably was not devoted to any medical theory, writes to Baron Larrey, that the best and most sure mode of escaping from the calamity is *insulation and a residence in the mountains*. Of nine medical practitioners who were living at Teflis at the time of the invasion of the epidemic, four died during the first few days.

"Let us hear the history of Mr. de Lesseps, the Consul of France at Aleppo, an individual who probably has never interfered in medical discussions. When the cholera approached that city in 1822, this gentleman retired, in company with all who wished to be of his party, to a garden at some distance from the city. His asylum was enclosed with walls, and was surrounded by a large fossé:

there were only two doors, one for entrance, the other for going out. As long as the malady lasted, he admitted nothing from out of doors without submitting it to the precautions observed in lazarettoes. His colony comprised *two hundred* persons, and consisted not only of Franks more or less acclimatised, but also of several natives. *Not a single individual contracted the disease*; while, at the very same time, within the city, four thousand beings perished in the space of eighteen days.*

"At Dantzic we find that the disease has prevailed for several weeks, *having probably been first imported by sea*. It has not extended from Dantzic to any of the neighbouring towns or districts of Prussia. The Prussian government enforces a very strict quarantine." p. 150-3.

If Dr. Hawkins intended to rest the doctrine of contagion upon the efficacy of the measures taken in Russia to check the extension of the disease, the point is now settled: since the disease has every where extended, and the government have withdrawn all the cordons sanitaires, acknowledging at the same time the inefficiency of these measures, and that there was no material part of the empire any longer to preserve. We have already seen that Dr. H. has been equally hasty in his confidence in the preservative powers of the strict Prussian quarantine; the disease extended from Dantzic to Elbing, Marienburg, Stargard, and Derschaw, and Prussia, like Russia, found these cordons wholly ineffectual. Indeed, if there is any thing settled in relation to cholera, it is as we shall presently see, the utter inefficacy of cordons sanitaires.

If certain insulated places have not been invaded by cholera, the same has happened to those which were not insulated. There is a small town in the Palatinate of Kalisch, which was constantly preserved from the disease, though surrounded by no cordon, and all the neighbouring places were affected; moreover, it received every day Russian families who fled from places where the epidemic raged.

"It is a well known fact," says Mr. Annesley, "that in the very centre of extensive districts, ravaged by cholera, there are certain narrow strips or patches of country, into which there existed no natural obstacles to the extension of the disease, but into which it never penetrated, although all around was one scene of desolation." p. 128.

Moreover, if insulation has appeared to protect against the disease, many cases might be adduced, in which this measure was ineffectual. The entire insulation of some persons and whole families at Moscow, says Dr. Jaehnichen, during the invasion of cholera, did not always preserve them from its influence; and according to the report of the British consul at Riga, the same was observed at this latter place. It

* P. F. Kerandren, *Mémoire sur le Choléra Morbus de l'Inde*. Paris, 1831.

is stated in the Madras report, that at Masulipatam, a town on the Coromandel coast, the disease first appeared among the convicts confined in the fort, and that it was not until about ten days afterwards, (July 10th, 1818.) that it was observed in the town and neighbourhood. A patient of Dr. GIBBS, in the naval hospital of St. Petersburg, who had been there for a month, was attacked and died on the fourth day. No other person in hospital was attacked before or subsequently.*

The Russian sanitary cordons have not preserved either Moscow or St. Petersburg; the sanitary laws of Prussia which were executed with a punctuality and rigour elsewhere unknown, have not preserved Berlin, whilst Thorn, in constant intercourse with Warsaw and Dantzic, enjoys an immunity from the pestilence.†

Further, the disease has occurred in ships at sea, and has attacked officers in their boats on the Ganges, far from any source of contagion. On the 28th of July, 1822, it broke out in the H. C. ship *Sir David Scott*, lying at the new anchorage off Saugor Island, Bengal, where she had already been two months, and was preparing to proceed on her voyage to China, her crew in perfect health. On the day just mentioned a poor old man was seized with cholera and died. The next day a fatal case occurred in a fine young man; third day there was another fatal case; fourth day ten new cases occurred, of which two were fatal; fifth day there were thirteen new cases, (all young, strong, and previously healthy men,) and five of them were fatal; sixth day eight new cases, one fatal; seventh day four persons were attacked, of whom two died; the next two days there were no cases, but after this a great many mild cases occurred, none of which proved fatal.

“In searching for a cause of this visitation of cholera,” says Mr. Grant, “there is nothing to be found in the state of the atmosphere, as indicated by the thermometer or barometer, that will assist us; for there was no kind of change from what had previously existed: the heat was not greater than usual; thermometer from 78° to 86° F. The ship had been in its place of anchorage for two months, and during that time the crew had enjoyed perfect health: the breezes at that time always blew from seaward, and were cool and pleasant; *there was no cholera in Calcutta, nor anywhere in our neighbourhood*: it came upon us like a thunderclap. That it proceeded from some cause which had a general influence over the whole of the ship’s company, but on some more powerfully than others, I have reason to believe, as there was a great and an immediate change in the looks of the people, which might, in some degree, be occasioned by the

* Ed. Med. and Surg. Journ. July, 1831.

† Report of M. Prunelle to the French Chamber of Deputies. Arch. Gen. September, p. 136, 7.

fears that pervaded their minds: but there was something more than that; for, on looking at the tongues of those otherwise in health, they were invariably much loaded, usually covered with a thick white crust.* He adds, "the disease was certainly not contagious."

We have thus examined in succession the principal circumstances which have been adduced in evidence of the contagiousness of cholera, and contrasted them with the facts which have been related of an opposite character. We leave our readers to draw their own conclusions from them. There is one fact however, not yet mentioned, which we will here notice, and which appears to be nearly decisive of the question—an *experimentum crucis* almost, as to the disease not being communicated from one person to another, which is, that persons have left infected districts, and died of the disease in various places, without the disease having been communicated to any of the inhabitants of those places. Thus the family of the Prince of Persia left Tabriz whilst the disease was prevailing there, and for the first ten days from four to six members of his suite were attacked daily, wherever they went, and yet not a single person of the villages through which they passed, or where they slept, took the disease.†

We have already noticed the fact of many Russian families flying from infected places, taking refuge in a small town in the Palatinate of Kalisch, without conveying the disease with them.

Dr. Albers in his official report, states that—

"During the epidemic, it is certain that about forty thousand inhabitants quitted Moscow, of whom a large number never performed quarantine; and notwithstanding this fact, *no case is on record of the cholera having been transferred from Moscow to other places*, and it is equally certain that in *no situation* appointed for quarantine, *any case of cholera has occurred*. That the distemper is not contagious has been yet more ascertained by the experience gathered in this city."

Several individuals from Riga died at Wenden and other parts of Livonia, without communicating the disease to a single person, while on the other hand, the disease spread in Courland and on the Prussian frontier, notwithstanding every effort to check its progress.‡

The advocates of contagion have not been insensible to these difficulties in the way of proving the contagiousness of cholera, but they have endeavoured to destroy their force by the assumption that the

* Cases of Indian Cholera. By Nathaniel Grant, Esq. London Medical and Physical Journal, October, 1831.

† Med. Chir. Trans. xii. 363.

‡ Report of the British consul at Riga.

virus requires “a certain predisposition of frame to manifest itself, even although exposure by contact of, or proximity to the affected be undisputed;”^{*} and they have gone so far as to attempt to prove that it is the same in all contagious diseases, even small-pox.[†] This necessity for a predisposition that contagion may be received, is truly something new in the history of these affections. That we occasionally meet with individuals who from idiosyncrasy or some unknown cause are *insusceptible* to contagion, is true, but the whole history of contagious diseases shows that such instances are rare. Is it to be believed then that of hundreds of hospital physicians and nurses exposed to contagion, that but few only should be affected? that a contagious disease should ravage one side of a street or market place, and find all those on the opposite side insusceptible to its action? that it should be confined to one portion of a populous camp or city, although no means were taken to prevent its extending over the whole of the dense population of either? or that persons labouring under a contagious disease should be carried into crowded hospitals, without communicating the disease to any one? And yet all these things have happened.

Our readers will perhaps think that we have dwelt too long on the subject of contagion; but it involves a question of extreme importance, the efficacy of quarantine regulations for arresting the progress of the disease; and as the pestilence continues to extend, and may even reach this country, it cannot be too soon determined whether it can be conveyed by persons or merchandise; since if it can, it is high time that sanitary measures were put in force. We have already shown a part of the evidence by which this point is to be determined, and shall presently present some further remarks on the subject. Let us first, however, consider the other theories which have been offered to explain the propagation of the disease.

Those who believe in the miasmatic origin of the pestilence, adduce in support of their opinion many facts, which, it must be admitted, are not without weight. Among these is the partiality of the disease for the margins of rivers and marshes, for low damp places in the vicinity of stagnant water—its occurrence on board ships which had no intercourse with the land, and attacking officers in their boats on the Ganges, far from any source of contagion—the restriction of the disease to particular limits, so that persons on arriving within these li-

* See an article in the Foreign Quarterly Review for October last. Mr. Kennedy in his work enumerates this predisposition as one of the laws of cholera.

† See an article in the Quarterly Review for October last.

mits became affected, whilst danger ceases on their leaving such spots—the peculiar liability of those who are exposed to the night air—and the extinction of the disease during winter and its reëappearance in spring when vegetable decomposition begins.

Mr. COTHER states that—

“Generally speaking, the cholera has been observed to take the course of the rivers, more or less; and has always been more destructive in villages, whose situations are low, and contiguous to wet paddy fields. In some of the largest and most populous places whose sites are elevated, it has not as yet appeared at all, though at the distance of only ten or twelve miles, in places otherwise situated, it has been very prevalent.”*

Mr. CHAPMAN says, that during his march with the details of the 1st and 8th Light Cavairy to Seroor,

“No case of cholera appeared in camp until our arrival within a few marches of Chittledroog, when unfortunately having pitched on the banks of a nullah, containing a large quantity of stagnant water, it was lamentable to observe that in a few hours from the time of our arrival, no less than fourteen cases of Sepoys were admitted into the hospital, suffering from the spasmodic cholera in its gravest form. I took an opportunity of remarking to the officer commanding, the probability of the disaster having been occasioned by the encampment in the situation above described, and I have the satisfaction of observing that much attention being subsequently paid to this in particular, the disease in a few days suddenly left the camp, and not three cases occurred afterwards, in a march of two months.”†

Mr. HENDERSON states that—

“While in charge of the 13th Light Infantry in Burmah, in December, 1825, they were encamped along with the 38th and 47th, two of His Majesty’s Regiments on some jungly ground near Patnago—early in the morning, an officer of the 13th was attacked, and died in a few hours; one of the 47th shared the same fate, and the disease became general in the division, in twenty-four hours; from fifteen to twenty men fell victims to it. In the course of the following day, the divisions were ordered to take up new ground, on a height about a mile and a half in the rear, which was done in the course of the evening, and not a single case occurred in either corps after this move.”‡

Mr. Chapman observes, that whilst at Cape Comorin,

“Although little cholera was at this time prevailing among any other class of people, it became remarkable, that the grass-cutters of the escort were frequently attacked, and that, usually in the evening, after having gone to a tank to cleanse their grass. On one occasion, two grass-cutters had been together at this tank, at the same time; they were both attacked on the same night, at the same hour, and died on the following morning. Out of eighteen grass-cutters, we lost five, besides others being affected, in the space of three weeks;

* Madras Report, p. 140.

† Ibid, p. 182.

‡ Ibid, p. 39.

it was presumed, that the circumstance was in some measure connected with the putridity of the water contained in the tank, and which certainly bore every appearance favourable to such an idea, being scarcely passable from the nauseous effluvium which it evolved. The impression made upon the minds of these individuals themselves, was corroborative of this opinion: the tank was spontaneously deserted by them, and no case of cholera occurred during a subsequent period of nearly nine weeks' stay at the same place."*

Dr. PETER SCOTT remarks in his report to the Madras Board, that—

“Dry, clean, open situations were obviously the most healthy; while more filthy situations, and such as were inhabited by the poorer classes, generally presented a great number of sick, and those frequently of a bad description. This was well illustrated at Vipery, in a situation abounding with stagnant water, the receptacle of every species of filth, but more especially at the spot, where I strongly suspect the epidemic first broke out at Madras, and where many fell victims to its severity; for, it was observed to be more prevalent amongst, and indeed for the first two or three days almost exclusively confined to, the natives residing in some huts, about which much offensive and corrupted matter had been accumulated, while those occupying the houses almost contiguous suffered but slightly, though comparatively more, than the inhabitants in the adjacent and more distant streets.”†

It is also stated in the Madras Report, that, during the prevalence of cholera at Madras, the crews of two ships—the Fairlie and Coutts, then in the Roads, became the subjects of the disease, but it did not appear on board the Coutts, till a fortnight after it had prevailed on the Fairlie—and it was noticed that “the men who worked upon deck, and those who slept to the landward side of the ship, were in both vessels decidedly the most obnoxious to the attacks of the disease.”

These and a multitude of other similar instances that might be adduced, would, in the absence of facts of an opposite character, be conclusive as to the miasmatic origin of cholera,‡ and at least seem to show that malaria has some agency in its production. We are not disposed to allow much weight to the fact of the exemption from the disease of some places particularly favourable apparently to the production of malaria, whilst situations in the vicinity less favourable have been ravaged with the disease, of which some remarkable examples might be cited.

Nor can we consider its progress against the course of the winds, of which there is a striking example in the advance-

* Madras Report, p. 23.

† Ibid, p. 19.

‡ A very remarkable instance of the production of cholera by miasmatic exhalation occurred at a school at Clapham, England. The particulars will be found in our Periscope, art. Miscellaneous Intelligence.

ment of cholera down the Coromandel coast against a strong monsoon, as *conclusive* against the disease being caused by miasma; since the property of penetrability possessed by gases, and which has but lately been investigated, may perhaps offer a solution of this difficulty; and further, the progress of the disease appears to have been much slower when opposed to currents of air, than when in the same direction.

But we must not shut our eyes to the fact of the disease occurring in places, which, if there be any such on the globe, must be incapable of engendering terrestrial miasma. The arid sands of Arabia, the rocky ridges of the Caucasus, and the nitrous steppes of Tartary, have not been exempt from the pestilence. Orenburg, where it broke out in 1829, appears from the description of Dr. Sakolov, to be one of those happy spots which would be selected by a physician for its peculiar exemption from all those circumstances which engender miasma. It is situated in an extensive undulating plain, traversed by fine streams, and is built on the higher bank of a river running in a defined channel, with no bogs or miry meadows at its margin, and the whole territory of Orenburg is nearly of the same nature, and the locality of the towns appear to have been well chosen.

The fact too of the disease having prevailed in Russia in defiance of intense frost, its continuing in many parts of the Orenburg government when the temperature was far below zero, and even breaking out in some places when the thermometer was 29° Fah. * when, of course, the idea of animal or vegetable putrefaction going on is out of the question, and when so far as our present knowledge extends, this pestiferous agent cannot exist, seems incompatible with the opinion, that the disease is propagated solely by terrestrial miasma.

We shall not inquire into the agency of sol-lunar influence, or particular electric states of the atmosphere in the production of the disease, since they are mere hypotheses, resting on no ascertained facts; and the former has been most conclusively disproved by Mr. Scott, who has likewise shown that the latter has at least but little plausibility.

The only other theory we shall notice is that which ascribes the

* In Tiriss-Usmanova, a Mahomedan village, above one hundred and thirty miles north-east from Orenburg, containing seven hundred inhabitants, the disease broke out for the first time on the 5th of December, when the thermometer was at 29° Fah.; under the same degree of cold it prevailed till the 23d of the same month; and in this short interval it seized one hundred and forty-seven persons, or above a fifth of the population, of whom thirty-seven, or nearly a fourth died. Several analogous occurrences are related in the Russian reports.

disease to some peculiar and unknown distemperature of the atmosphere. It has been objected to this, that if the germ of the disease existed in the air, it should travel under barometrical laws; should be propagated in the direction of the winds, and its velocity should be as great, and that every country over which the wind blows should be affected.

That a vitiation of the air may exist, which is inappreciable by any of our instruments, can scarcely be denied. Who has detected by the thermometer, the barometer, or by chemical analysis, marsh or animal miasmata, or the contagious principle of small-pox? Who has detected the particular vitiation of the atmosphere productive of the "influenzas" which have so often pervaded the whole surface of the globe, and which cannot depend upon marsh or animal decomposition, since they have prevailed equally in the intense cold of winter as well as in the heats of summer, and in every variety of locality.

That the extension of this atmospheric distemperature is independent of the course of the winds, is shown by the whole history of these epidemics. That which is prevailing in this country at the present moment appeared at Canton and Manilla in November, 1830: it preceded the cholera in Russia, Poland, and Prussia; prevailed in France in May and June last; in England during the heats of July and August, and reached this country in November, and has continued during one of the most intense winters we have had for many years. The course of these epidemics, with a single exception, so far as we can learn, has been from east to west, gradually extending without regard to prevailing winds.

That some general distemperature of the air exists during the prevalence of cholera,* and that this vitiation takes place gradually, and produces a particular diathesis, appears from sufficiently conclusive evidence.

Dr. Walker, in his report to the British government, states, that by far the greatest part of the medical men, (of Moscow,) are of opinion that the disease is not contagious, but produced by some pecu-

* Even animals have felt the influence of this distemperature. In Hindostan, in 1817, numbers of cattle are said to have died of cholera; numbers of dogs were attacked in the streets of Calcutta in October, 1827, with choleric symptoms, and died. Mr. Chalmers says that in the towns in India near the hills, where cholera was so fatal, a disease occurred among the cattle which kept pace with, and often exceeded in mortality that of the human species. Dr. Ranken states that goats and camels died of it at Rajputana, and Dr. Jaehnichen says that in Moscow, during the prevalence of the epidemic, poultry, as chickens, turkeys, &c. were affected. It is said in Prussia that multitudes of fish died during the prevalence of the epidemic.

liar state of the atmosphere not cognizable by either our senses or by instruments; that this was proved by almost every person in the city feeling during the time some inconvenience or other, which wanted only the exciting cause of catching cold, or of some irregularity in diet, to bring on cholera.

During the prevalence of the disease at Orenburg, Dr. Onufriev states that there was scarcely a single inhabitant who had not some symptoms of disordered digestion. At St. Petersburg, previously to the appearance of the epidemic, every person complained of a tendency to diarrhœa, which in some cases was very profuse,* and it was the same at Berlin, according to Dr. Steffen.† Six months before the epidemic invasion of Poland, sporadic cases of a most violent character occurred.‡ The British consul at Riga, in his report to his government, states, that half the town has been visited by diarrhœa, and that the slightest deviation from the regimen now prescribed, (consisting principally in abstinence from acids, fruit, beer, &c.) invariably produces an attack of that nature, and generally cholera; fright and intoxication produce the same effect.

Dr. Burne informs us, that during the raging of the cholera on the continent, there occurred at the Chancery Lane Dispensary, London, a great number of cases of dysentery, diarrhœa, and cholera, which had so decided an epidemic character, that he believed them to be produced by the causes which were in operation on the continent.§ Whilst cholera has been committing such ravages in various places in the Baltic, Elsinour and the adjacent islands, have been visited by a peculiar form of disease, attended with much derangement of the digestive organs; sometimes passing into severe intermittent fever, and at others presenting the appearance of malignant typhus.||

The following extract of a letter from Dr. J. Brown to Drs. James Johnson and Tweedie, dated Sunderland, Nov. 10th, 1831, will show that previously to the prevalence of cholera epidemically in that town, there was a marked predisposition to bowel complaints.

“Early in the month of *August*, cholera appeared and speedily became very prevalent. It ranged in all degrees of intensity, from slight bilious attacks, to cases attended with violent spasm, coldness, collapse, almost (if not complete) arrest of the circulation, *white discharges, suppression of urine, and in short, all the symptoms ascribed by observers to the Asiatic and Continental diseases.* Of these more intense cases, several were fatal, some of them within twelve hours; whilst

* Gibbs in *Edinburgh Medical and Surgical Journal*. April, 1831.

† *Gazette Médicale*, Oct. 22, 1831.

‡ M. Chamberet's communication to the Royal Academy of Medicine. *Gazette Médicale*, Oct. 1831.

§ *London Medical Gazette*, Vol. VIII. p. 462-7.

|| *Ibid*, p. 829.

others narrowly escaped by prompt and skilful medical assistance. Such cases occurred in situations remote from each other; some of them several miles inland—one, for instance, and that a fatal one, in a female living in the village of Boldon, five miles in the interior, and remote from the river. Others of the agricultural population suffered in various situations: some certainly near the river, but there were no ships in at the time, which had come from suspected places.

“On the abatement of the heat, cholera became less general; but did not totally cease, cases continuing to recur at intervals, some fatal, others of great intensity, but terminating favourably; whilst the prevailing gastric and intestinal constitution was marked by the frequent occurrence of cases of fever, commencing with vomiting and purging of matters variously coloured—in short, by symptoms of cholera; and this state of things continued till the almost simultaneous occurrence of four deaths from cholera, on the 21st ult. and 1st inst. excited general alarm.—For what has subsequently occurred, the reports to the Board of Health must be referred to.

“Whilst matters are thus proceeding in Sunderland and its immediate vicinity, information I have received from various channels, leaves no doubt on my mind, that a similar train of events has been in progress generally throughout the north-eastern division of the kingdom—the same prevalence of fever, of which the initiatory stage is marked by vomiting and purging—the same occurrence of fatal cases of cholera, since the season of heat and fruit had passed; but so far as I know, the same prevalence of the intense forms of the disease has not been manifested elsewhere as here; yet this difference in degree does not, I imagine, make our state *essentially* different.—What is our fate to-day may be that of others to-morrow. A fortnight ago we were no worse than our neighbours.”

Dr. G. Otto, of Copenhagen, in a letter with which we have been lately favoured, informs us, that there is at present prevailing in Copenhagen, a marked disposition to diseases of the digestive organs, as diarrhoea and common bilious cholera; and it is remarkable too, he adds, that the evacuations of common cholera, which are usually bilious, have become watery and slimy, which circumstance, he says, makes him believe that the disease will gradually change into epidemic cholera. “I have,” he further observes, “within the last fortnight, treated some cases which were so violent, and in all their symptoms so like oriental cholera, that were the epidemic prevailing in the town, I should not have hesitated to declare them to be that disease.”

If the fact of the disease being often confined to particular limits be urged against the existence of a general distemperature of the air, such objection is much more available against the contagiousness of the affection; since, to explain its not spreading, it is necessary to believe that it will affect those only who are predisposed, an assumption in relation to a contagious disease, which we have already shown

to be entirely gratuitous. Whilst on the contrary, it appears to require no very great stretch of faith to believe, that excesses in eating and drinking, exposure to night air, &c. which the contagionists consider as forming the predisposition, may excite the disease, and that their action is generally required for its production.

Nor does it seem very difficult of belief, that in low, damp, filthy, ill-ventilated places, that the distemperature of the air may be increased, and the mortality of the disease therefore greatest in such situations.

We shall not dwell, however, on this point. It has been our object to present our readers with facts, and not with arguments; and we leave it, therefore, to them to decide how far this last theory is reconcileable with the phenomena of the disease.

Before leaving this branch of the subject, however, we may say a few words in relation to the production of a local focus. That in cholera, as in dysentery, fevers, and in several diseases, where a number of patients are confined in a small, dirty, ill-ventilated apartment, the atmosphere may be so vitiated that healthy persons remaining in such a place become particularly liable to the disease, we cannot in the present state of our information either aver or deny, but some facts which have been related, incline us to the affirmative. But even if this be a fact, it is still to be proved that this arises from a *specific* emanation from the bodies of the sick; and not from a vitiation of atmosphere—the same in all diseases—which only predisposes to disease—whilst the particular form is determined by the reigning epidemic constitution; and that there does exist at times a disposition to certain diseases in preference to others, independent of the existence of what is considered as a specific virus, seems indisputable.

We must not conclude this article, although it has already grown to too great a length, without offering some remarks on the sanitary measures which should be adopted in relation to this disease. Among the first, we must enumerate the avoidance of all excesses in eating and drinking, and all those causes which ordinarily produce derangement of the digestive organs. Surgeon Daw quotes the following fact as an illustration of what care and temperance can perform in the way of protection from the attacks of cholera. The fact is not of itself conclusive, but connected with other circumstances, it is at least important.

“Two bodies of men, one amounting to three hundred, the other one hundred persons, were located in adjoining situations when the cholera arrived. The smaller body immediately determined to live temperately, and by avoiding the night air, and the other predisposing circumstances, which were obvious, to endeavour to escape the distemper. The plan succeeded so well that only

one individual was seized of the one hundred. The larger body adopted no precaution. They lived in their usual way, and one-tenth of their whole number perished.”*

It is equally important to attend to personal and domestic cleanliness, and to ventilation; to avoid dwelling in low, moist situations, and especially sleeping in damp, ill-ventilated apartments; and in general to shun all those causes which we have pointed out as predisposing to or exciting the disease, and which we need not again here enumerate.

Finally, should the disease appear in any of our cities, the hygienic measures we have alluded to, should be enforced by the proper authorities. If the place in which it occurs be filthy, ill-ventilated, with the dwellings close together, and a crowded population, the measures found so useful in yellow fever should be resorted to. The inhabitants should be dispersed until the place can be perfectly cleansed and purified. When, however, it extends to the more cleanly parts of a city where there is a free circulation of air, such a measure would be productive of great distress and inconvenience to the inhabitants, without the slightest beneficial result to others.

We have not included quarantine regulations or the insulation of places among our sanitary measures, because a careful examination of all the documents to which we have had access, and they are very numerous, have not satisfied us that the disease can be communicated from one person to another, or conveyed by merchandise; and ample experience abroad has shown the utter inefficacy of both these means in arresting the progress of the disease, and the great aggravation of it, and the awful distress which is caused by the latter. It is vain to say that these quarantines and cordons sanitaires have been evaded; if they cannot be rigidly enforced by the despotic governments of Europe, what are we to expect from them, (allowing the disease to be contagious,) in this country. On the first appearance of the pestilence, Russia formed immense military lines for the purpose of arresting its progress; St. Petersburg and other places were completely surrounded—what has been the result? the disease has spread over the empire, and the inefficacy of these measures have been there acknowledged. The moment the revolution broke out in Poland, that unhappy country was completely environed by the troops of Austria and Prussia, and when the cholera appeared there, these cordons were increased, and the most rigid quarantine enforced. M. Brière de Boismont, in his journey to Poland, had to pass through these lines, and bears testimony to the severity with which sanitary

* Kennedy, p. 91.

measures were executed. M. Prunelle, in his report to the French chamber, states that those of Prussia have been enforced with a strictness before unknown. Nevertheless, three months scarcely elapsed from the appearance of the pestilence in Poland, before it had passed the triple cordons sanitaires of Austria and Prussia, pervaded the whole of the grand duchy of Posen, ravaged eastern Prussia, penetrated into Silesia, and destroyed thousands of victims in Galicia. The pestilence advanced towards Berlin:

"Its progress," says M. de Boismont, "is disputed foot by foot, with all the energy of despair, a last cordon is created on the Oder, composed of the élite of the Prussian troops, the guards; nevertheless, the cholera entered the capital early in September. Those who know Prussia, will not doubt that the orders of the government were rigorously enforced. The same measures were taken to protect Vienna, and with the same results."

Austria and Prussia, like Russia, have withdrawn all their cordons, and acknowledge not only their inutility, but that they are productive of immense evils.

We will spare our readers the details of the horrors which have resulted from the insulation of places where the disease was prevailing. Those who have read the vivid description of the plague in London, by Defoe, may have some idea of the scenes presented at Opatow, a town in the palatinate of Sandomir, and in other places which have been insulated, whilst the disease was raging in them. The total suspension of business—all succour cut off—the sick, the dying, and the dead mingled together, and alike neglected—every inhabitant agonized with terror, and thus subjected to one of the most powerful predisposing causes of the pestilence—and all those scenes of human wretchedness and depravity, which are too often enacted when men are released from the controul of the laws, and abandon themselves to despair.

The length of this article admonishes us that we must come to a conclusion, though we are far from having exhausted the subject. It has been our object, however, to present our readers materials upon which they may form their own judgments, rather than to lead them to adopt our conclusions, and have therefore candidly stated the prominent facts, without concealing those which militate against the various theories we have examined, or attempting to reconcile their discrepancies by ingenious sophistries.

The consideration of the pathology and treatment of the disease must be postponed to a future occasion, and we regret this delay the less, inasmuch as it will enable us to benefit by the additional lights which will no doubt be shed upon these subjects, by the able and acute minds now engaged in the investigation.

BIBLIOGRAPHICAL NOTICES.

XII. *A Short Tract on the Formation of Tumours, and the Peculiarities that are met with in the Structure of those that have become Cancerous; with their mode of Treatment.* By Sir EVERARD HOME, Bart. &c. &c. 8vo. pp. 98, with several plates. Sept. 1830.

No department of surgery is more replete with interest than that which treats of tumours, and particularly that class which eventuate in cancer. While many conflicting opinions have been advanced as to their origin and development, and much adverse experience elicited to sustain this contrariety of speculation, Sir Everard Home has been industriously employed searching out and arranging all the testimony which a long life sedulously devoted to professional pursuits could afford. If severe industry and unremitting perseverance can offer a rational hope that this abstruse subject can be elucidated, we would expect to receive ample information from the researches of the veteran surgeon.

Tumours, according to Mr. Home's investigations, result from the extravasation of blood, or some of its ingredients, after external violence, in greater quantity than is necessary to repair the injury.

Fatty tumours are but the deposition of fat in parts slightly injured, not recovering their healthy action, but continuing to deposit that substance. The materials of tumours after severe injury differ according to the quantities and new combinations of the effused fluids, but although differing from each other, are generally of the same character of the surrounding healthy parts; this fact renders it necessary for the surgeon to be familiar with the physical attributes of the texture in which the tumour is seated.

There is a peculiar species of tumour, yellowish-white colour and resembling a kidney, located in the neck, involved in a cyst, and attached to the neighbouring parts by small blood-vessels and loose cellular membrane; to remove it the surgeon must merely lay open the cyst and turn out its contents. There is another character of tumour, involved in a nerve and deriving an investment from it.

"A lady, twenty years of age, had a tumour on the outer side of the biceps muscle of the right arm, the size and shape of a pullet's egg; it was moveable in the surrounding parts; it had been several years in acquiring its present size, and was very painful when pressed upon. Its rapid increase induced her to have it removed by the knife. When the parts were fully exposed, the surface was smooth and shining. At both ends the tumour terminated in a white cord: upon cutting through the outer covering, the real tumour was found to be inclosed in a nerve. When this discovery was made, it was thought prudent to divide the nerve at both ends and remove the whole. The patient had no use afterwards of her thumb and forefinger, and had a numbness in these parts; the skin which covered them was unusually rough and dry, and the cuticle came off in scales.

"On examining the tumour, three inches of the nerve itself had been removed; it was separated into two portions, each much flattened, and passing over the

sides of the tumour. There was also a thin nervous expansion, not thicker than a membrane, completely investing the whole. This was readily separated, although more firmly attached at the extremities." p. 5.

The tumour seemed to be made up of serpentine fibres in the course of the nerve, separated from each other by its substance: a radiated structure was discernible at its surface.

The second case cited, is analogous to the above, and displays a similar involution of the nerve, the tumour being involved in the axillar plexus; it was removed as in the former case. Four days after the operation the appetite flagged, pulse became frequent, skin hot, spirits depressed, and on the following day the patient died. Post mortem examination revealed the cyst contracted and four times thicker than at the time of the operation, cavity almost filled with coagulated blood and lined with coagulable lymph. The cause of death in this case is ascribed to the consequent inflammation. Mr. Home assumes as diagnostic of this character of tumour, absence of pain when moved laterally and an excessively acute pain when motion is attempted in the other direction.

The next class embraces those tumours which have their origin in the diploe of the skull and eventually make their way through the external table. In the case related, the tumour which resulted from the kick of a horse many years before, was located originally underneath the external table of the right parietal bone, and the tumour in its progress approached so near the outer edge of the orbit, that there was only space sufficient to admit the blade of a saw between them. The superior and massive part was soft, consisting of fat mixed with a steatomatous substance, while the base was strictly bony. The tumour was successfully removed, and Mr. Home deduces the following surgical corollary.

"This case establishes the fact, that all tumours on the head may be removed without danger, provided no symptoms have occurred during their increase of any of the functions of the brain having been interfered with." p. 16.

Hitherto cancer has been esteemed a disease originating in a poison generated in different parts of the body from accidental or other causes, and especially in the glandular structure.

"As the same parts in different individuals, under similar circumstances of violence, do not always form cancerous tumours; when they do so, it must arise from a peculiarity of constitution, disposing the injured parts to take on this disease, and therefore the tumour in its origin cannot be cancerous." p. 17.

We cannot discover the justness of Mr. Home's conclusion from the above general position, that all persons under similar circumstances of violence are not subjects of cancer, viz. that the early stage of this class of tumours is free from cancerous taint, but, so far as the mode by which the injury is inflicted is concerned, we are prepared to admit that it is not a cause of cancer, for had an injury of the same amount been inflicted in a different manner, the cancerous condition of the constitution would have been alike prepared to excite this disease; were it not thus, the recuperative powers of the system would immediately have repaired the breach.

Our author denies that disease is hereditary, but admits, what we conceive to be the same in substance, an hereditary constitution predisposing children to the disorders to which their parents were most obnoxious.

In glandular structures, in which the vessels composing the glands are

wounded and their contents poured out, the effused fluid consists of the peculiar secretion of the organ and the ingredients of the blood, which are undergoing the necessary changes to produce this secretion. The tumour formed in this instance is composed in one part of lymph globules, with tubes passing through them, containing carbonic acid gas and which become vessels filled with red blood. This character of tumour is denominated scirrhus and is the preparatory stage to true and stony cancer. By analysing this structure and observing the changes which the several parts underwent in the different stages of cancerous disease, Mr. Home was induced to consider the serum and lymph globules to be the parts that become vitiated and are enabled to propagate the morbid poison.

"This opinion receives strong confirmation by the red blood not being met with in such tumours, in the latter and confirmed stages of the disease, and the tumour itself in its increase, becoming harder in its texture; to which we may add, that the only discharge that takes place, when such tumours produce any, is an aqueous fluid, or, in other words, serum devoid of its coagulable lymph, which in a natural state it contains in considerable quantity." p. 24.

"The compacted lymph globules, among which there is no apparent circulations of any kind, is probably the morbid part, and that which comes on the disease by its contact and absorption; since, as the malady continues, it increases in bulk; and when any part of it remains, after an ineffectual attempt at its removal, a rapidity in the progress of its increase takes place." p. 28.

The aqueous fluid which is separated from the consolidated mass of lymph globules does not partake of the morbid poison: this is illustrated by several cases of hydatids in the *mammæ*. The tumours in these instances proceeded from blows received accidentally, and it is probable that the blood effused from the accident left the serum which constituted their contents.

Tumours of this character were formerly termed cancerous hydatids, but in the opinion of Mr. Home, have not the slightest connexion with this disease.

Scirrhus is more frequently seated in the *mammæ* of females than any other part. Climate and constitution have a very considerable influence in forming such tumours: in Otaheite and the neighbouring islands the women decide their quarrels by fighting, the blows are principally aimed at the breast, which is unprotected, and yet cancer is never met with in these islands. Our author introduces a number of cases to exemplify the various stages through which scirrhus tumours pass in becoming open cancer, with many anomalous concomitant symptoms, and others to illustrate that form of tumour which is strictly pseudo-scirrhus. We will quote a few.

"A lady, fifty-eight years of age, had a tumour in the breast, which for nine or ten years had been growing to its present size. Several glands in the axilla were enlarged; the tumour itself made slow progress, but the skin, which firmly adhered to the tumour, and had the appearance of being tucked down upon it, had in the neighbourhood become studded over with small tumours, resembling split peas: they first appeared there, but in nine months they were met with all over the body, on the opposite side as well as that on which the tumour had formed. They were in no place close together, being about an inch apart and nearly the same in size, but rather larger near the original disease. They gave a considerable degree of uneasiness and her health was much impaired. In a few months she died. The tumour had previously become painful, frequent retchings had been produced, and her stomach retained little or no food." p. 40.

It is questionable whether the small tumours of the skin were cancerous, since they are found in cases in which we have no reason to suspect the existence of cancer.

"A lady, who had occasionally matter, blood, or bloody water issue from the nipple, had, some months after, a tumour formed, and the nipple ulcerated; the glands in the axilla swelled, and all the symptoms of cancer came on, of which she died." p. 45.

"A woman was received into St. George's hospital with a small tumour at the basis of the nipple, which was very moveable. The first symptom of the disease was blood oozing from the ducts in the nipple. It was removed with the surrounding parts. The tumour, when examined, after the removal, was found to be no part of the gland of the breast, but a newly-formed structure; and I never heard of the disease having returned." p. 45.

"A lady, twenty-three years of age, had a tumour in the breast, hard to the feel, giving occasional pain: it had continued for a year, when Mr. Hunter extirpated it with the parts surrounding it. Upon examination of its structure, it was found to be a solid mass, distinct from the neighbouring parts, to which it was slightly attached." p. 46.

The character of this tumour was doubtful, but Mr. Home thinks it would eventually have become cancerous.

"A lady, thirty-two years of age, the mother of several children, discovered by accident a tumour in the breast; as the tumour was moveable, means were taken to disperse it; but these proving ineffectual, I was consulted, and advised its removal, which was acceded to. At the time of the operation the tumour moved freely in one direction, but was more confined in that of the fibres to which it was found to be attached, and part of that muscle was removed along with it. The wound healed in three weeks. In six months after the operation a fulness was felt in the pectoral muscle attended with pain; in a twelvemonth a tumour had formed and the skin was put on the stretch. The pain had become intolerable: the tumour daily increased; and, upon her being seized with vomiting, the lower part became discoloured from the rupture of the smaller vessels. A fortnight afterwards the skin broke, and a fungous excrescence appeared, covered with blood, from the vessels in the surface giving way. In about three weeks she died." p. 48.

We here discover the difference between cancerous disease of a glandular and that of a muscular structure; in the muscular it assumes the character of true hæmatodes. The following case is introduced to illustrate the symptoms which frequently attend those tumours which encroach upon a nerve without involving it in the diseased mass.

"A lady, between fifty and sixty, had a tumour in the breast, which was removed by Mr Hunter. The parts healed kindly; but at the end of a year and a half a gland in the axilla enlarged, and the pain was dreadfully severe, and she coveted an operation. In performing it, upon dividing a nerve that passed over the surface of the tumour, she said, 'the pain is gone;' and it never after returned: but the progress of the disease was not stopped, and in two or three years she died." p. 50.

We have already stated, that the *mammæ* of females are most frequently the seat of scirrhus, and next to them in proclivity is the tongue. Almost every local disease of the tongue is prone to become cancerous from the glandular structure of this organ. In relation to the treatment of tumours in this part, we have but one principle, which is arbitrary—namely, remove them immediately, upon determining that they are cancerous, or disposing to that char-

acter. Mr. H. performs the operation for removing diseased portions of the tongue entirely by the ligature; this mode, while it prevents the danger from hæmorrhage, entails pain and suffering upon the patient; but still the favourable result of the many cases which fell under Mr. H.'s care, seems to warrant its use, notwithstanding the inconvenience arising from the temporary salivation, resulting from the irritation of the ligature, and the unpleasant factor attendant upon it. In this expression of cancerous disease, the same exclusive rule, relating to scirrhus of the mamma, maintains, to wit: when the disease is strictly local and circumscribed, the operation offers a rational hope of relief; but if it has become constitutional, and by this term we do not mean that irritable state of the system which appertains to almost all local diseases, but rather that cancerous condition which is *sui generis*, and can only be recognised by its manifestations in different glandular structures, no local address can offer the most remote expectation of cure, for the primary seat of disease is no longer the irritating agent, but the assimilating apparatus has become impressed with a peculiar and malignant ability to establish and propagate diseased action.

"Margaret Dalton, forty years of age, was admitted on the 25th of December, 1801, into St. George's Hospital, on account of a tumour, the size of a pea, on the right side of the tongue, near its edge. It had begun by a pimple, and increased without pain. It impeded her voice, and, when bruised by the teeth, bled freely. It was removed in the following manner:—The tongue being thrust out, a crooked needle with a double ligature was passed through its substance, some way beyond the tumour; one ligature was tied behind the tumour, the other before it, including a segment of the tongue. A considerable salivation ensued, which was much more troublesome than any other symptom, and continued till the slough came away. The ligature furthest from the tip separated on the sixth day, and the other on the seventh. In three days the wound healed, and she got well." p. 63.

"A gentleman, sixty years of age, consulted Sir William Blizard for a tumour on the tongue, the size of a swan shot, hard, and firmly connected to the surrounding parts. I was requested to assist in the operation. A needle with double ligature was passed through the tongue, behind the tumour: when tied it gave a good deal of pain, but the sensibility was immediately destroyed. After the operation the patient sat down to dinner with great cheerfulness: on the sixth day the ligature came away. On meeting the patient a few days afterwards, I could only perceive a slight indentation where the tumour had been."

"A gentleman, thirty-six years of age, had a small sore upon the edge of the tongue, the effect of irritation of the tooth, with which it came in contact. The tooth was extracted; a second tooth was drawn, but the sore put on a malign aspect, and gradually increased. In a few months it had ulcerated so much as to make talking painful, and his words indistinct. He lingered in this melancholy state for six months, and died." p. 68.

The next character of cancerous disease which attracts our attention, is that of the testicle. Two modes of progress is discernible, the one becoming hard and involving the cord, and finally, the lymphatic glands as high as the loins; this is genuine cancer. The other contaminates the neighbouring parts, and is propagated by means of the absorbent glands.

"In either of these local diseases, the parts are not capable of contamination of the neighbouring parts, till after those have long continued to have lost their healthy state; and when the organ is extirpated early, the patients, I believe, always get well." p. 71.

Mr. Home, in the above paragraph, labours to impress his original position upon us, that the early stage of scirrhus is not malignant; but we apprehend that we shall find the cancerous infection to be the sole cause of the loss of tone in the parts in proximity to the disease, and the distinction made above, is more precise than just; for surely, if in this condition of things, we should remove the organ, leaving the neighbouring parts in this unhealthy state, not cancerous, according to our author, but merely declining in tone, we should not have eradicated the disease, or even arrested its course; this Mr. H. admits in the following words:—

“But this is a rare occurrence,” (speaking of the removal of the disease by extirpation of the testis,) “when the disease has completely established itself; and when it has not, an operation, or any other violence committed on the parts by its irritation, accelerates the progress of the disease.” p. 71.

Cancer is not unfrequently located in parts of the system not glandular in their structure; in many instances local injuries give expression and development to the latent cancerous leaven.

We will quote a paragraph from Mr. H. which, while it confirms our views of the previous existence of a cancerous temperament, enforces upon us the necessity of managing judiciously every local affection, however slight in the first instance its tendency may be to become malignant.

“When parts have been long in a diseased state, we have no security against their not ultimately taking on a cancerous action; but in all such cases, there must be a peculiarity of constitution existing previously to the parts undergoing such a change.” p. 77.

The last character of tumour mentioned by Mr. H. is seated under the lower jaw, and from its structure appears to be cancerous.

“A gentleman, thirty-five years of age, had a tumour formed behind the angle of the lower jaw, considered to be a lymphatic gland; this increasing, was removed. Three years after another formed, and slowly increased to the size of a pullet’s egg; it had no sensation; he received a blow upon it with a stick, in a drunken brawl, which did not injure the skin. In a few weeks it became double its former size, and was removed by Mr. Hunter. The tumour, when examined, was in its substance one half white, the other black. The colour was from blood, which pervaded the part formed after the blow, but did not extend to the original portion.” p. 93.

Notwithstanding the labour and attention devoted to this subject, still all is indefinite and conjectural in relation to that peculiar condition of the system, which generates true cancerous disease, and consequently, no definite or accurate prognosis can be ventured in reference to local affections. Whether or not, peculiar expressions of disease would prove malignant in their termination, constituted a quere, which Sir Everard Home, after a half century’s attention to the subject, was unable to determine.

While it is a subject of painful regret, that diagnostic acumen could not be attained, it is a much more melancholy consideration to humanity, that little has yet been done to check the malign flight of the fell destroyer. Hemlock used internally and externally, has been found to be a valuable mean in mitigating the sufferings of the patient, while sarsaparilla, in powder, before it has been exposed to the deteriorating influence of heat, has proved a most valuable adjuvant in controlling indurated glands, evidently tending to scirrhusity.

In taking leave of this little volume, we experience those painful emotions which characterize the departure of an old acquaintance. It has been announced in its preface, to be the last work which its favoured author shall ever submit to public inspection, and it is but a just tribute to the labour and toil of a professional career, embracing more than half a century, to pronounce this, like all other productions from the pen of Mr. Home, to be based upon practical observation, and is consequently the simple, but honest detail of facts. The candour with which it displays the mode of treatment, and its results, in one of the most baneful maladies to which flesh is heir, will insure for it an attentive perusal from every friend of medical science, and for its author a most earnest prayer that he may enjoy, in the wane of life, that repose which virtuous intent and industrious enterprize cannot fail to secure. A. L. W.

XIII. *A Treatise on Physiology applied to Pathology.* By F. J. V. BROUSSAIS, M. D. &c. &c. &c. Translated from the French, by JOHN BELL, M. D. &c. &c. and RENE LA ROCHE, M. D. &c. &c. Third American edition, with notes and a copious appendix, 8vo. pp. 666. Philadelphia, Carey & Lea.

It is not our intention, at this late period, to enter into a formal review of the Physiology of the celebrated professor of Val-de-Grace. The fact that three editions of the American translation have been called for within the short space of five years, very fully evinces the estimate in which the work is held by the medical public of this country. A patient study of his *Treatise on Physiology applied to Pathology*, is indeed indispensable to all who may desire to form a correct estimate of the value of the doctrines in relation to the nature and cure of diseases, advocated by M. Broussais; doctrines which have within a few years exerted so powerful, and in the estimation of many, beneficial an influence upon medical opinions and practice.

That the treatise before us is destitute of error either in matter of fact or in doctrine, we pretend not to assert. The contrary must necessarily be the case, as well from the nature of the subjects of which it treats, as from the peculiar circumstances under which the work was composed. With the exception of Bichat, in his *Treatise on General Anatomy*, no one had attempted before Broussais, the task of collecting the various facts known in relation to the healthy functions of the human system, and comparing them carefully with the state of the same functions during disease; of determining accurately the relative influence of the different organs upon each other, and the modifications which the morbid conditions of one set impress upon the actions of another, and of arranging the materials thus obtained into a systematic form. Had perfection crowned this difficult task, we should have considered its author as something more than mortal. Physiology as a science is yet in its infancy; every year new discoveries are made in relation to the vital functions, by which previous opinions are either confirmed or subverted; this added to the rapid accumulation of pathological facts, renders each new labourer in the field, with only a moiety of the talents and industry of Broussais, capable of detecting errors in his system, and of filling up and improving the general plan, the outlines of which he has so ably sketched. It is not for the invariable correctness of his opinions upon the subject of physiological pathology, although the

accuracy of very many of them has been established by subsequent investigation, that the system of M. Broussais commands our praise; it is from its having been the means of directing the attention of physicians to physiology as the only correct basis of pathology, and to the manner in which the study of the functions of our several organs during health leads us to an acquaintance with the morbid conditions of the latter, upon which the derangement of the functions constituting the phenomena of disease depend. By pursuing his pathological investigations in close connection with physiology, M. Broussais has confessedly removed many of the errors of preceding physicians, and if he has not invariably arrived at truth, he has indicated the only certain road by which it may be obtained. Morbid phenomena have in consequence already been divested of much of the mystery by which they were formerly enveloped, and the application of our remedies are now guided by system and their effects calculated with some degree of certainty, where formerly their administration was marked by the grossest empiricism.

Should the author be induced to prepare for publication a second edition of the present treatise, he will doubtless correct many of the errors which it now contains, and by availing himself of the labours of subsequent investigators in physiology and pathology, give to his system in other respects a greater degree of perfection.

But whatever may be our opinions as to its general merits or demerits, the *Treatise on Physiology applied to Pathology* constitutes a necessary introduction to the study of the other writings of its author, the principal of which have already or will shortly appear in an English dress.

The translation before us presents a very correct exposition of the views of the author as presented in the original—we say this from having made a comparison of the larger portion of it with the latter. For the fidelity with which the translators have performed their task, they deserve the thanks of all who are unable to consult the work in the French. It was one, we confess, of no common difficulty, as well from the novel forms of expression which the author has often been obliged to make use of in the statement of his doctrines, as from the obscure style in which much of the first part especially is composed. Inaccuracies in the translation of scientific works, though too often committed either from ignorance or carelessness, are at once an unfairness in relation to the authors, and a gross imposition upon the readers. It is on this account that we noticed so pointedly the able manner in which the present American translation of M. Broussais's physiology has been executed. But Drs. Bell and La Roche have not restricted themselves to a mere translation of the author's text: together with a very able introduction, in which a succinct view is presented of the present state of physiology and pathology, particularly in reference to the improvements for which both are indebted to the labours of M. Broussais, the present edition is accompanied with a copious appendix, in which some of the views of the author are commented upon, and many additional facts are added in illustration of the doctrines advanced by him, or for the purpose of testing them by the labours of more recent investigators. The whole constitutes a very valuable addition, and will be consulted with profit by the student of medicine, as well as by that large class of practitioners whose want of facilities or of means prevents them from commanding the use of an extensive li-

brary. The appendix contains a condensed view of the present state of our knowledge in relation to several points in physiology that have of late years engaged the attention of some of the ablest cultivators of the science, and which could scarcely be obtained from any other source. Thus articles E. and F. of the appendix, contain, the first, a highly interesting view of the opinions of Bell, Shaw, Bellingeri and others upon the fifth pair of nerves; and the second of the doctrines of Rolando, Philip, Allison, Brachet, and others of equal eminence, concerning the functions of the eighth pair. In these two articles the student will learn nearly all that is now known in relation to these two important portions of the nervous system, and in articles L. and M. we find an exposition of the discoveries of Mr. Charles Bell in regard to the nerves of sensation and of motion; and the nerves which he has termed irregular or respiratory. The information thus presented [could only have been acquired by a reference to various publications, to which few students have ready access. We may say the same of article P. upon the cause of the perforations of the stomach after death.

The first article of the appendix is a criticism upon the author's views in reference to the general vital property of the tissues. This he considers to be merely contractility, but the editors deny that contractility can be the fundamental vital property of all the tissues, inasmuch as many of them do not evidence in the slightest degree the phenomenon characteristic of this property in its correct signification—viz. contraction. While, however, they refuse to admit the correctness of M. Broussais's views respecting the universality of the property of contraction, but at the same time maintain that the exercise of the vital property, whatever it may be, is not necessarily attended in all the tissues with contraction, at least so far as we are able to ascertain, they are far from coinciding with those physiologists who contend for the existence of a plurality of properties. "So far," they remark, "from entertaining such views, we believe that there is in truth but one general property of the tissues, which we would designate by the term irritability or excitability, and that sensibility, which some have elevated to an equal rank with the other, must be regarded as simply the effect of the exercise of a function." But after all that has been said upon this point, we believe that we have as yet arrived at no clear conception of the fundamental vital properties. The doctrine which refers the various functions of the tissues to the exercise of a single vital power, will be readily received by many, from its apparent simplicity. We are not persuaded, however, that its truth has been by any means satisfactorily demonstrated. Two properties appear to us to be necessary for the performance of most, if not all the vital functions; the one the capacity of perceiving the appropriate stimuli by which the particular tissue is excited to act, and the second the capacity of performing, in consequence of such perception, the actions for which the tissue is destined. Whatever name may be given to these properties, facts would appear to indicate that they are distinct from each other, and that individually they present very important modifications in different tissues.

The second article of the appendix notices certain figurative expressions made use of by the author of the treatise, and by which he renders himself liable to the very criticism which he has applied to similar modes of expression when employed by others. The censure which the translators have visited on

M. Broussais is merited, in consequence of his severe reprobation of the same error when committed by his predecessors and contemporaries. We must nevertheless admit that there is considerable difficulty, when treating of mere abstractions, to avoid an occasional indulgence in *ontological* language. What is particularly to be objected to, is not so much the "*ontologisms*," the phenomena of health and disease, when care has been taken to express clearly the dependance of these phenomena upon the normal or abnormal actions of the several organs, as in mistaking, as is too much the case with many physicians, even at the present day, the phenomena of health and disease, but especially the latter, for *entities*—in other words, for something entirely independent of, and even of acting upon and controlling the actions of material organs of the body. Thus we hear daily of fever invading and destroying an organ, of gout wandering through the system to locate itself upon the weaker parts, and of inflammation travelling or being driven from one organ to another. Upon such absurdities have pathological and therapeutical opinions been repeatedly founded.

The article of the appendix marked I. will be found a very able criticism upon some of the opinions advanced by M. Broussais in his chapter on the intellectual and moral faculties.

We are persuaded that the present edition will find its way into the hands of all who are not already in possession of an English translation of the work.

P. C.

XIV. *Handbuch der Anatomie des Menschlichen Körpers*. Von Dr. ANTON RÖMER, Sr. k. k. apostol. Majestät Rathe, Stabsfeldarzte, ordentlichem, öffentlichem, Professor der Anatomie an der k. k. Medicinisch-chirurgischen Josephs-Akademie, &c. &c. &c. Erster Band. pp. 308. Wien, 1831.

Manual of Human Anatomy. By Dr. ANTON RÖMER, Professor of Anatomy in the Imperial Joseph's Medico-chirurgical Academy, &c. &c. Vol. I. Vienna, 1831.

It must be confessed that at the present time there is no scarcity of elementary treatises on anatomy; yet it must have fallen to the lot of most teachers of that subject to observe, that many of those which have been as yet published, abound in so many defects, both as regards arrangement and execution, as to render them unfit for the purposes for which they were intended, or of very limited utility to the student. Many have attempted to remedy these deficiencies, yet in most instances, if they have avoided the faults of their predecessors, they have committed others of equal magnitude, and have left the difficulty but slightly rectified. Every professor has, besides, his own peculiar views upon many points, and pursues an arrangement somewhat at variance with that adopted by others, so that to enable the student to derive full benefit from his instructions, it is almost indispensable that he should have a class-book drawn up in accordance with the order of his course. These are a few of the motives by which Dr. Römer has been actuated in undertaking the preparation of the work, the title of which we have announced above.

The first volume only has been as yet published. Besides some general definitions of the subject, it embraces the consideration of the several elements of the organization, or of general anatomy, and the description of the bones, liga-

ments, and museles. The second volume, which is announced to appear in a short time, will embrace the consideration of the vessels, nerves, and viscera.

The author considers the ultimate arrangement of all the organized solids as consisting in an admixture of globules and a coagulable fluid. These, by various combinations and modifications, form the different tissues and organs. The tissues he enumerates in the following order:—1. The horny. 2. The cellular or mucous. 3. The serous. 4. The fibrous. 5. The cartilaginous. 6. The osseous. 7. The muscular. 8. The nervous. 9. The glandular. Each of these tissues is briefly described in the order in which they have been designated; but as these descriptions are drawn up with much brevity, they cannot, of course, furnish more than a general exposition of the properties of the different structures.

The bones and ligaments are considered under one division of the work, and are described with as much minuteness of detail as is necessary for the student. The order of their development is particularly designated, and the subject is frequently illustrated by inductions drawn from comparative anatomy. The same course is pursued in reference to the muscles, which are described with much clearness and precision. Appended to each subject treated of, is a select bibliography, consisting of an enumeration of the best sources of information. But what, in our opinion, constitutes the greatest merit in the plan of our author, and which distinguishes it from all others, is a reference, from every subject described, to the preparation in the great museum attached to the Joseph's Academy, by which it is illustrated. The numbers of the different preparations are placed at the foot of the page, so that the student is not only enabled to refer to that collection for a specimen of every object which he has to study, but is furnished, in Professor Römer's manual, with a complete descriptive catalogue of the museum. This plan cannot be too highly commended, and if more generally adopted, could not fail to throw open the rich treasures of the collections connected with many of our schools, which, for want of some means of reference and explanation, merely remain shut up as objects of curiosity, and a complete dead letter as regards utility. We sincerely trust, that the plan adopted by our author will be imitated by others. He has, we conceive, conferred an important benefit on all those who resort to the Joseph's Academy for anatomical instruction, and we should be much pleased to see the same advantages extended to those who visit our various institutions for the same object.

E. G.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Hermaphroditism*.—M. RUDOLPHI, in a memoir presented to the Academy of Sciences of Berlin, October 20th, 1825, describes a case of hermaphroditism of a very rare kind in the human species. It was met with in the body of a child, who had died, as it was said, seven days after birth, but the development would lead to the supposition of its being three months of age. The penis was divided inferiorly; the right side of the scrotum contained a testicle, the left side was small and empty. There was a uterus which communicated at its superior and left portion with a fallopian tube, behind which was an ovary destitute of its ligament. On the right side there was neither fallopian tube, nor ovary, nor ligaments, but a true testicle, from the epididymis of which there arose a vasa deferentia. Below the uterus there was a hard, flattened, ovoid body, which when divided exhibited a cavity with thick parietes. The uterine tubes terminated above, in the parietes of this body, and at the right the vasa deferentia, without however penetrating into its cavity. Finally, at its inferior part there was a true vagina which terminated in a cul-de-sac. The urethra opened into the bladder, which was normal. The anus, rectum, and the other organs were naturally formed. M. Rudolphi considers the ovoid body, situated beneath the uterus, as the prostate and vesiculae seminales in a rudimental state.

2. *Monstrosity*.—M. GEOFFROY ST. HILAIRE announced to the Royal Academy of Medicine, at their meeting of the 23d of August last, that a monstrosity analogous to Ritta and Christina, but of the male sex, had been born at Vaison, département of Vaucluse.

PHYSIOLOGY.

3. *Extraordinary Abstinence*.—A curious instance of this is related in the *Mémoires Encyclopédique et Progressive des Connaissances Humaines*, for September last. The subject of the case was a farmer of Gaillac-Toubzac, arrondissement of Muret, named William Granié, thirty years of age, who murdered his wife on the 5th of April last, in the most brutal manner, and was imprisoned at Nuret, where he murdered his bed-fellow. Granié was then transferred to the prison of Toulouse. On the 15th of April he determined to starve himself to death. On the 24th of April the first appearances of emaciation were perceived, and on the 29th he was affected with general tremors. On the 30th he had sufficient strength to break the padlock which fixed his hand-cuffs. On the 18th of May he was affected with violent oppression. The 6th of June deglu-

tion became difficult; the 12th the pulse was 89; the 17th violent convulsions occurred, which terminated this slow agony, which had continued for sixty-three days. During this interval G. only drank at intervals a little water, and sometimes his urine. Although taciturn in prison, he constantly answered to questions in such a manner as to remove all idea of mental derangement.

In our sixth volume, p. 543, will be found an account of a case in which a man lived on water for fifty-four days.

4. *Influence of the Mind over Disease.*—The following curious instance of this is related in the 30th Volume of *Rust's Magazin*, by Dr. MATHY, of Dantzic. A candidate in theology, affected with a double quartan fever, which had resisted the bark, was obliged to preach on a Sunday in a chapel at Dantzic. The thermometer, (Reaumur's,) was 20° below zero. The paroxysm of fever commenced some minutes before the preacher was to mount the pulpit; however, he could not avoid preaching, and employing all his powers to collect his ideas, and to master his voice, he completely subdued the fever, which did not subsequently reappear, and no evil effect followed.

5. *Sounds of the Heart.*—M. DESPINE has communicated to the Royal Academy of Medicine, an account of some experimental researches relative to the diagnosis of diseases of the heart, and of the circulation. These experiments have been repeated in presence of M. Andral, jr. to whom the memoir was referred by the Academy, and in his report, he states that M. Despine has established, 1st, that the first sound is produced by the contraction of the ventricles; 2d, that this first sound is succeeded by a momentary interval; 3d, that a second sound succeeds, which is not produced by the contraction of the auricles, but by the dilatation of the ventricles; an active expansion, during which the heart preserves its resistance, and by which the blood of the auricles is drawn into the cavities of the heart. (This proposition, however, M. Andral considers as only very probable; it cannot be confirmed except by direct observations in cases of diseases of the heart.) Finally, that the auricles in receiving or transmitting the blood, have only a vermicular motion, instead of contracting, and that if they perform any part in the projection of the blood into the ventricles, it is solely by their elasticity.

It also results from the experiments of M. Despine, that the first beating of the heart is simultaneous with that of those arteries only which are near the heart; but that in proportion as they are distant from the centre of the circulation, does the arterial expansion tend to become isochronous with the second sound of the heart. This result has been verified by M. Andral in many cases. —*Rev. Méd. Oct. 1831.*

PATHOLOGY.

6. *On Inflammation of the Medullary Tissue of the long Bones.*—M. REYNAUD of Paris, the author of a paper which has just appeared with the preceding title, professes to have taken up the subject not so much with the view of giving a full treatise on it, as for the purpose of calling the attention of surgeons to a disease apparently of great frequency, and probably of much importance as the sequela of operations on the extremities. The reader may conceive the consequence attached by M. Reynaud to a thorough inquiry into all its relations, when it is added that in one of the great hospitals in the course of two years every case of amputation of the thigh proved fatal, and in every instance was inflammation of the medullary tissue of the remaining part of the thigh-bone found after death either singly or in conjunction with other morbid appearances.

The cases he has brought forward in illustration of the general principles which will be presently stated, are five in number; for, with a considerate atten-

tion to his reader's leisure and patience, not often met with among French pathological writers of the present day, he informs us that the numerous additional cases he might have likewise detailed would not enable him to go further in his inferences, or to explain better the phenomena of the disease, than the examples which he has published, and of which we shall communicate the following short analysis.—*Case I.* The first he considers an illustrative example of the inflammatory state of the medullary tissue in its lowest degree, such as is necessary to the production of callus on the end of the divided bone after amputation. The patient was a young man, whose arm was removed by M. Roux on account of extensive disease of the elbow-joint. The operation was short, two ligatures only were applied, the stump next morning had healed by the first intention, and in a short time the ligatures came away, and cicatrization was completed. The patient nevertheless continued languid, depressed and feverish; in a few days the left thigh and leg became painful and doughy; the right knee then became enlarged and obviously contained fluid; the fever in the meantime increased, and dry tongue, total prostration, and slight delirium ushered in death. On dissection there was found great serous infiltration of the left thigh, a little pus at the upper part of the tibia, the saphena vein thickened and red, and containing pus, the crural vein obliterated by a clot resembling in colour and consistence thick chocolate; purulent effusion into the right knee-joint, with redness of the synovial membrane; bloody injection of the dura-matral arachnoid with a very thin layer of purulent-like effusion and serous infiltration of the pia mater; a fatty state of the liver. On examining the stump, the cicatrix was found firm, except at a small point only; a semi-fibrous layer rested on the end of the bone, firmest next the bone, and forming a plug over the medullary canal; around the edge of the bone a ring of bony matter was formed, and a smaller bony ring was also formed on the edge of the medullary canal; almost the whole medullary membrane of the bone was of a reddish-brown colour; the periosteum was healthy; clots of blood were found in the sub-scapular veins, where they end in the axillary vein; but the other veins, as well as the artery, presented a natural appearance.—*Case II.* The next is an instance of inflammation of the crural vein after amputation of the thigh, where the medullary tissue was found in a state of more advanced inflammation. The particulars of the case before death are not given; it is merely observed that amputation was performed on account of a chronic disease of the knee-joint, and that the patient died in thirty days. On dissection, there was found thin effusion of flaky pus on the arachnoid; numerous purulent points dispersed throughout the substance of the brain; a few tubercles in the lungs; a purulent cavity in the spleen; the crural vein of the stump inflamed; the end of the bone denuded of its periosteum to a short distance upwards; the medullary tissue inflamed and purulent as high up as the separation of periosteum externally, and a considerable portion of the rest of it redder, denser, and less oily than natural.—*Case III.* This is an extremely interesting example of advanced inflammation of the whole medullary tissue of the bone. The patient, a lad, sixteen years of age, had a curved leg and slight disease of the knee-joint; and, together with his parents, insisted on having amputation performed to rid him of the incumbrance, although the surgeons of the hospital were averse to it. M. Boyer therefore amputated the limb at the usual situation above the knee-joint, and dressed the stump in the old French method. Every thing went on prosperously till the sixth day, on the morning of which M. Reynaud found him sitting in bed making caddis; but in the evening the countenance became yellow; delirium ensued during the night and also diarrhœa; on the ninth day, the upper part of the thigh was much swelled, and on squeezing it, pus flowed profusely from the wound; acute pain in the stomach, hurried respiration, a short cough, fever, increased yellowness of the skin, and yellow tinging of all the secretions rapidly followed; and death took place on the tenth day. On dissection, the dura mater was found yellowish, and covered internally with a thin layer of lymph; a sero-purulent fluid was effused into the left pleural cavity; and the lungs were inflamed and infiltrated

with pus. The veins proceeding from the stump were inflamed and contained pus as high up as the iliacs; the muscles near the flaps were infiltrated with a sero-gelatinous fluid; the periosteum was detached from the bone as high up as the greater trochanter; the bone was yellowish and surrounded by pus. The medullary tissue was inflamed and in a state of suppuration up to the very termination of the medullary canal.—*Case IV.* Is an instance of extensive inflammation of the medullary tissue, without any other material diseased appearance in the body. Amputation of the thigh was performed by M. Roux on account of an old inveterate disease of the knee-joint; the stump was dressed so as to heal by the first intention; and for fifteen days nothing occurred to disturb recovery. But then the stump became painful, the patient complained of the dressings being always too tight, and was very restless; subsequently strong fever set in, the breathing became frequent, and death supervened, without any particular symptom referable to the stump, except increasing and extreme tenderness, with diminution of the discharge. The appearances found on dissection were confined to the limb operated on. The soft parts were united except at one point, where there was an opening down to a purulent cavity round the end of the bone. The bone was denuded of its periosteum two inches up in front, and half an inch higher behind; above this it adhered to a thin layer of recently-formed bone; and still higher it was still connected with the original bone, but more loosely than usual, and without any appearance of uniting vessels when it was stripped off. The extremity of the medullary tissue formed a brownish-white, spongy mass, infiltrated with pus, and plugging up the cavity in the bone; above this plug there was a purulent cavity extending as high as the level of the trochanter—the pus lying in contact with the bone posteriorly, but separated from it anteriorly by a layer of tissue infiltrated with pus: and the cavity communicated outwardly by a small aperture. The cells of the spongy tissue of the bone above the medullary cavity were lined by a deep red membrane, and filled with pus. The pus was every where very fetid. The substance of the bone was unusually thick in front and thin before; its outer surface, instead of being smooth, shining, moist, and slightly rosy, was dry, white, and dull; and its texture, as seen when it was broken across, appeared unusually white, and presented none of the red spots which are seen in a healthy bone after the laceration of its connecting blood-vessels.—*Case V.* Is a similar instance of very extensive and advanced inflammation of the medullary tissue, united with various other morbid appearances. Amputation was performed on account of white swelling of the knee-joint. An attempt to heal the stump by the first intention failed; and profuse suppuration took place; but methodical compression gradually produced almost complete union. From the second day, however, violent fever set in, cough with thick expectoration followed, diarrhœa next appeared, and then yellowness of the skin before death. On dissection, the dura mater was found yellowish in colour, and lined internally by a pseudo-membranous effusion; the left lung in the incipient stage of carnification, the right much gorged and a purulent cavity at its base; and the pericardium containing some serum and a thin layer of lymph on both its surfaces. The flaps of the stump adhered partially. There was a purulent cavity at the end of the bone. The femoral artery contained pus towards its divided extremity. The femoral vein was throughout its whole course thickened, surrounded with brittle cellular tissue, lined with a pseudo-membrane internally, and filled with pus. The end of the bone was denuded of its periosteum to a short distance upwards, and the rest of this membrane was more easily stripped off than usual; but the surface and internal structure of the bone, except just at its extremity where the periosteum had been separated, was of the natural smoothness and redness. The lower end of the medullary tissue was prominent, black, and purulent, and it was in a state of fetid suppuration throughout the whole cavity of the bone.

In the general summary with which M. Reynaud concludes his paper, he observes that the frequency with which inflammation of the medullary tissue has been met with in the long bones after amputation, shows that there is some

connexion between the disease and the injury done to this tissue by the saw; and he therefore throws out the hint whether it is not advisable to use some precautions for rendering the incision through the cavity of the bone smoother than it is commonly made, and likewise to cover it more closely with the soft parts of the flap. He considers himself justified in inferring from his cases, that the stripping of the periosteum from the bone is produced by an advanced state of inflammation of the medullary tissue, and that the extent of the one is generally conformable with that of the other. He is not satisfied he is yet able to point out the symptoms of the disease he describes, but says he would be inclined to suspect it wherever there is a general doughiness of the stump without external redness or other signs of inflammation—when a large quantity of matter may be squeezed out of the stump, which cannot be accounted for from the extent of the remaining sore—when there is acute, deep-seated pain, felt during the first dressings, and accompanied with extreme tenderness of the stump—and when there is yellowness of the stump, acidity of the breath, and general fever.

There appears little doubt that the subject of the author's paper has not hitherto been sufficiently attended to by surgeons, and is deserving of more notice. Some allusion to it has been made by M. Ribes, in the article *Necrosis* in the *Dictionnaire des Sciences Médicales*, and more lately by M. Blandin in the article *Amputation* in the *Dictionnaire de Médecine et de Chirurgie Pratiques*.—*Ed. Med. and Surg. Journ. Oct. and Archives Générales, June, 1831.*

7. *Tetanus from Inflammation of Spinal Cord*.—An interesting case of this is related by M. COMBETTE in the *Archives Générales*, for June last. The subject of it was a healthy elderly woman, accustomed to field labour. She was seized without any apparent cause with acute pain in the loins, and along the back, and almost immediately afterwards with a general and extreme rigidity, by which she was deprived of the use of her limbs. Five days afterwards she was admitted into the hospital St. Antoine, at which time there was a general contraction of the muscles, semiflexion of the forearms, with extreme difficulty in extending them, extension of the limbs with impossibility of bending them, constant closure of the jaw, extreme difficulty and pain in speaking, difficult deglutition, redness of the features, suffusion of the eyes, fulness and bardness of the pulse, considerable frequency and some labour of respiration, and perfect preservation of consciousness. She was immediately and freely bled. Next morning her state was unaltered: and she screamed aloud when she was touched or any attempt was made to move her. The blood was buffy. Stimulant draughts were now given, with a drachm of laudanum, blood was withdrawn from the loins by cupping, cataplasms were applied to the back, and opiate friction used over the body generally. In the evening no change had taken place except that deglutition had become much more difficult. At midnight the breathing was laborious and accompanied with mucous rattle and frothing at the mouth. Sopor now appeared, interrupted, however, by screams when she was meddled with. The pulse continuing full and strong, and the countenance flushed, she was again freely bled, after which she expressed herself relieved. Her attendant then urged her to take one of her draughts, which she was very unwilling to do; she at length yielded; but immediately the contractions were much increased, violent convulsions ensued, and in this state she expired.

On dissection thirty hours after death, there was found great rigidity of the extremities; vascularity of the cerebral membranes, and somewhat more redness of the cerebral texture than is natural; much serum in the canal of the spine; the spinal membranes, and particularly the inside of the dura mater, of a bright rose-red colour; the surface of the cord covered with a net-work of vessels; softening of the anterior part of the cord, so as to present no resistance to the knife, and to form indeed throughout its whole length, a soft semi-liquid pulp of a lively rose colour, especially in the cervical and lumbar regions, where some spots of extravasation were also seen; no deviation from the

healthy state in the posterior part of the cord; no particular appearance at the origins of the anterior or posterior nerves; the pneumogastric nerves and cervical ganglions of the sympathetic nerve in a healthy state; the lungs gorged, especially at their base and posteriorly; the mucous membrane of the stomach of a pale yellow tint, with some red points here and there; the other internal viscera healthy.

8. *Small-Pox*.—During the last eighteen months M. LORIS has had the opportunity of examining the bodies of fifteen patients who died of small-pox. In eleven of these he found in the bronchia either a false membrane, or a collection of pus or blood. In one-third of the cases there was a morbid development of the glands of Brunner forming exanthematous pustules. In no case were the elliptical plates altered.—*Gazette Médicale*, June 25th, 1831.

9. *Cysts in the Heart*.—M. FLANDIN exhibited to the Anatomical Society of Paris, at their meeting on the 6th of July last, a heart, in the left ventricle of which were cysts containing clots of blood, and the centre of these clots was filled with pus.—*Revue Méd.* August, 1831.

10. *Pustules in the Intestines caused by the internal administration of Tartar Emetic*.—M. GUERARD says that he has met with, in two persons treated by large doses of tartar emetic, pustules similar to those produced on the skin by the application to it of that article. These pustules occupied a considerable portion of the intestinal canal; there existed besides no sign of dothineritis. The stomach was healthy.—*Ibid*.

11. *Coëxistence of Mumps with Leucorrhœal Discharge*.—Mr. JOHN DUNN relates in the *North of England Medical and Surgical Journal*, for June last, four cases in which inflammation of the vagina and purulent discharge followed mumps. The first case occurred in a child two and a half years old, the second in a child of four years of age, and the other two were servants. The children neither slept with each other or with either of the servants.

12. *Partial Aneurism of the Heart?*—M. VIDAL has exhibited to the Anatomical Society of Paris, the heart of an old woman, with a small tumour near the apex of the right ventricle. This tumour communicated with the cavity of the ventricle by a small orifice: it is lined with an organized membrane continuous with that of the heart. It contained recently coagulated blood. The disease was not suspected. The patient died with what are termed asthmatic symptoms.—*Journal Universel et Hebdom.* April, 1831.

MATERIA MEDICA AND PHARMACY.

13. *Properties and Therapeutic Uses of Potatoes*.—M. NACHE has instituted a number of experiments with the potatoe, and ascertained, he says, that this vegetable possesses in a moderate dose a laxative property; this property, he says, exists in a higher degree in the white than in the other kinds of potatoe. The reason of this quality not being previously observed is, that it entirely disappears when the plant is cooked; to preserve it, the potatoe must be subjected only to infusion, or at most very slightly boiled.

This vegetable also exercises a manifest action on the kidneys; it powerfully augments the secretion of urine, and gives to that liquid a peculiar slightly ammoniacal odour; it renders the urine also clearer alkaline, and causes the disappearance of the pulverulent and flocculent deposit, which are so often formed in the urine, and which are produced by the excess of acid.

It acts with equal power upon the liver causing an increased secretion of bile.

It also appears slightly to excite the cerebral and nervous systems, and nevertheless to produce a sedative effect in respect to their action. It produces heat and smarting in the skin and acts upon it both as stimulant and astringent; this last action is particularly observable in the red potatoe.

M. Nauche says that he has employed this therapeutic agent with advantage in chronic affections of the mucous membranes, and he has frequently cured scurvy with it. But he has used it with the greatest benefit in cases of gravel, when the patient passed fine sand or small gravel formed of uric acid. Finally, he says he has derived advantage from it in organic lesions of the heart and in dropsy.

M. N. employs this vegetable most frequently in the form of decoction; if he wishes it to act powerfully on the liver, the intestinal canal, and kidneys, he uses a simple infusion. He frequently employs it cut in small pieces or grated, and added to foot-baths, as a substitute for mustard, and mixes it with ground flaxseed to form a stimulating catapasm.—*Gazette Médicale*, Sept. 24, 1831.

14. *On the Therapeutic properties of the Ava root.*—We find in Captain Beechey's *Narrative of a Voyage to the Pacific*, the following interesting extract from the journal of Mr. COLLIE, surgeon of the Blossom, relative to the effects of the Ava, a root formerly in much use in the Pacific. The intoxicating property of this root, the cutaneous eruption which succeeds its use, and the renovating effects it appears to have upon the constitution, has been noticed ever since the discovery of the Society Islands. Mr. Collie observes that—"a course of it is most beneficial in renovating constitutions which have been worn out by hard living, long residence in warm climates, without, however, affections of the liver, and by protracted chronic diseases; more especially if the disorders be such as by the humoral pathologists would be attributed to an attenuated or acrid state of the blood." He had an opportunity of seeing "a gentleman, a foreigner, who had undergone a course of it to remove a cutaneous affection said to have been similar to St. Anthony's fire. It had affected at different times almost every part of the body, going from one place to another, but had been particularly obstinate in one leg. He took two doses a day of half a pint each, one before breakfast and one before dinner, by which his appetite was sharpened; and by the time he had finished his meal a most pleasing state of half intoxication had come on, so that he was just able to go to his couch, where he enjoyed a sound and refreshing sleep.

"About the second or third week, the eyes became suffused with blood, and the cuticle around them began to scale, when the whole surface of the body assumed the appearance above described. The first dose is continued for a week or so, according to the disease, and then gradually left off. The skin clears at the same time, and the whole system is highly benefited.

"I recommended the ava, and had an opportunity of seeing the first effects upon a man affected with chronic superficial ulceration, affecting the greater part of the toes, and the anterior part of the soles of the feet. The legs and feet were œdematous and swelled; the pain was very distressing, preventing any sound repose, and not permitting him even to lie down or bring them up, so as to be near a line horizontal with the body. The ulcers were covered with a tough, viscid, dark-coloured discharge that adhered to the surface, and entirely concealed it. His frame was emaciated, pulse quick and irritable, appetite gone, tongue dry and reddish; he had taken mercurial preparations at two previous periods, as he said, with considerable benefit; but for want of the medicines it was stopped, when the sores were nearly healed. He had been, and I believe still was, addicted to drinking spirituous liquors. The ava was given three times a day with the same immediate effects as before-mentioned, and at the end of ten days the ulcers were clean and healing. From the commencement of the course he had been able to lie down, allowing his feet to hang over the

bed-side: he had slept soundly, and his appetite was good. Could he have procured and applied a suitable dressing for the ulcers, with appropriate support to the œdematous extremities, I have no hesitation in saying that the plan would have succeeded. Even with all these disadvantages, I am inclined to believe that a cure will be effected if he abstains from liquor."

15. *Experiments on Conium Maculatum*. By R. BATTLE. — No. 1. The whole of the colouring matter and aromatic properties were discharged from one ounce of the leaves of conium, (dried at a temperature of 120 degrees,) by two macerations in rectified spirit of wine, each for twenty-four hours. The decanted spirit was gently distilled, and left *seventy-eight grains of resinous matter, partaking highly of the aromatic properties of the plant*. A drachm of the resinous matter having been incinerated, the ashes were boiled in water; nitrate of silver was added, and a precipitate ensued, which, being submitted to the action of the blow-pipe, two grains and a half of silver were revived, showing the presence of two grains of muriatic acid. The ashes remaining, (nearly the whole,) were then boiled in water acidulated with nitric acid, chloro-prussiate of potash was added to the liquor, and the presence of iron was shewn by a slight blue colour. The leaves originally acted upon by the spirit of wine weighed, when re-dried, six drachms, six grains—loss thirty-six grains. They were incinerated, and the ashes having been boiled in water, a solution of nitrate of silver was added. A precipitate ensued, and the revived silver weighed four grains. The residuum of these ashes, boiled in water acidulated with nitric acid, chloro-prussiate of potash being added to the solution, a very slight blue colour was produced.

No. 2.—Nearly the whole of the colouring matter and aromatic properties were taken up by two similar macerations in *proof spirit*, (each twenty-four hours.) The spirit, after standing some hours, changed gradually to a yellow colour, and a precipitation of green flocks ensued, which, when dried, weighed eight grains. The precipitate was wholly dissolved by rectified spirit, imparting to it a green colour, but not much of the aromatic flavour. The liquid from which the eight grains were separated being distilled, yielded four drachms, ten grains of extract, tasting strangely of the conium.

The re-dried leaves, weighing three drachms, fifteen grains, not being wholly deprived of their colour, were incinerated, and the ashes boiled in water. Nitrate of silver was added, *but no precipitation ensued*. Having been then boiled in water, acidulated with nitric acid, and chloro-prussiate of potash being added, a slight blue colour was produced.

No. 3.—Four ounces of the dried leaves were incinerated, the ashes were boiled in three separate portions of water; the three portions were then mixed and evaporated to dryness. Thirty-eight grains of saline matter remained, which having been again dissolved in water, nitrate of silver was added so long as any precipitate ensued: the silver revived from this, weighing seventeen grains, showing the presence of fifteen grains or thereabouts, of muriatic acid. The addition afterwards of a few drops of nitrate of barytes, to the same liquid, produced a slight degree of cloudiness.

The residuum of the ashes, (being about one-half,) was boiled in water acidulated with nitric acid, and chloro-prussiate of potash being added, a very slight blue colour was produced. Oxalate of ammonia effected no change.

The tests above-mentioned show the presence of muriate of soda, in considerable quantity, a very small portion of sulphate of soda, and a trace of iron.

No. 4.—Six gallons of the juice (14lbs. yielded about a gallon,) in a temperature of 100 degrees, lost its green colour, the green matter separating in flocks and floating on the surface. This being collected and dried on filtering paper, at a gentle heat, weighed five ounces, one drachm, thirty-six grains, which, being pulverized, was macerated in cold spirit of wine so long as it imparted any colour. It was then nearly exhausted of the remaining colouring matter, by boiling in spirit of wine. The spirit, upon careful distillation by

the most gentle heat, gave one ounce, four drachms, thirty grains, of resinous matter, *tasting and smelling very strongly of the plant*. The refuse from the green resinous matter, subjected to the spirit of wine, when re-dried, weighed three ounces, one drachm, thirty grains; having lost three drachms, thirty-six grains. The spirit had a slight flavour of the conium, but not sufficient to warrant the supposition that three drachms, thirty-six grains, could have been held in solution by it. In two or three weeks the spirit deposited a white flocculent matter, which, on being separated from the spirit and dried, weighed two grains. It possessed the taste and smell of the plant; did not burn on the application of flame.

The resinous matter from which the spirit had been separated by distillation, was very pungent, smelling and tasting most sensibly of the plant. It nearly volatilized in a strong heat, leaving only a small portion of muriate of soda, amounting to about $2\frac{1}{2}$ grains from the *drachm*. During the combustion, the smell of conium was most perceptible. The refuse from the green matter which had been nearly exhausted of colour by repeated macerations in spirit of wine, was incinerated, and the ashes were boiled in distilled water. On the addition of nitrate of silver to this solution, the slightest cloudiness only ensued. The ashes being boiled in water acidulated with nitric acid, and chloro-prussiate of potash being added, a very slight blue colour was observed.

No. 5.—The juice from which the green matter had been separated, (No. 4,) was carefully distilled to three pints. The first gallon that came over tasted a good deal of the conium, and there appeared to be a small quantity of essential oil floating on the surface. The second gallon had considerably less flavour, and in the three last, scarcely any smell or taste was perceptible. In about fourteen days a white flocculent separation appeared in the liquor of the first gallon, and on examination it appeared to be the same as that which precipitated from the distilled spirit, (No. 4.) the essential oil had disappeared, and the water had comparatively little smell or taste. The three pints of thick liquor remaining in the still were evaporated on a water-bath, to the consistence of an extract, which weighed $1\frac{3}{4}$ lbs.; having scarcely any smell or taste of the conium.

Four ounces of this extract were incinerated, and the ashes were boiled in three successive portions of water, the three quantities of water were mixed and evaporated, leaving fifty-six grains of saline matter, which were re-dissolved in water: nitrate of barytes being added to the solution, a precipitate ensued, which when dried weighed two grains. Nitrate of silver was then added to the same liquor, and a copious white precipitate appeared. The silver being revived from this precipitate, weighed twenty grains, proving the presence of seventeen grains of muriatic acid. The ashes remaining were boiled in water acidulated with nitric acid, and chloro-prussiate of potash being added, a slight blue precipitate ensued. Oxalate of ammonia produced no change.

These experiments show that the plant contains;—

Much extractive matter, containing little medicinal property;—

Green resinous matter, possessing a highly-volatile principle, on which the active medicinal property of the plant appears to depend;—

Muriate of soda in considerable quantity;—

Sulphate of soda in small proportion;—

Iron in the proportion of about five grains to a hundred weight of the fresh plant.

The medicinal properties being thus evidently contained in the green resinous matter, the question arises in what form it can be most beneficially administered. The present mode of preparing the extract, by evaporating the expressed juice till it acquires a proper consistence, is obviously defective, and upon attentive consideration it will be seen that the green resinous matter, when once separated from the juice, cannot be again intimately combined with the extractive matter; and that evaporation at a temperature exceeding 120 degrees, volatilizes the principle on which the power of the plant appears to depend,

(Nos. 1, 2, and 4.) Hence the irregular action and uncertain effect of the medicine, as now prepared; and it follows that the preparation No. 2, by proof spirit, procured from the leaves dried at not more than 120 degrees, or the powder, is the best form.—*Lond. Med. Gaz. July, 1831.*

PRACTICE OF MEDICINE.

16. *Case of Arthritis and Sciatica treated by Acupuncture with Complete success.*—The following case is interesting and well related, and the remarks on it judicious and highly creditable to the author, Mr. JOHN HAMILTON, one of the pupils of the Meath Hospital, Dublin. In that institution, Dr. Graves has introduced the plan of entrusting to each student a certain number of cases of which he has charge. The history and daily reports of these cases are to be taken by him, and the diagnosis, prognosis, and mode of treatment are to emanate from himself, subject always to the corrections and emendations of the physician, who thus, in his daily visit to the patients, acts in a consulting capacity. Every new case, or every change in the symptoms of a case, calls for a new examination and discussion between the physician and pupil, and the result is highly beneficial to all parties concerned, but especially to the pupil, who is in this way taught to think for himself, and to compare disease, as it is really met with, with the description given in books. His attention is directed to the acquisition of facts, and he learns that accuracy of examination which is so essential a qualification of the physician. The case about to be related is extracted from a clinical report to which the first clinical prize was adjudged. When a similar plan of instruction shall be introduced into our hospitals, we may hope to receive from the pupils of those institutions, equally able reports of the cases therein treated. At present there is something radically wrong in the management of our hospitals, which prevents that portion of the public who support these establishments from receiving any advantage from them.

CASE.—Pat. Rosseter, æt. 30, labourer, was admitted into the Meath Hospital, at Dublin, Nov. 30, 1830. He complains of pain on motion, and stiffness of both arms and wrists, not very severe, nor very tender on pressure; also severe pain on motion a little behind and above the left hip-joint. He walks lamely and with difficulty, not being able to move the thigh, or put his foot firmly to the ground without great pain. The knees are slightly stiff and painful. None of these parts are red or swollen, and do not give pain while the man remains at rest. They are not worse at night. He attributes them to cold caught from exposure while in a profuse sweat, after a hard day's work, six weeks ago. At first a chilliness came on, and continued for a week, when the shoulders and arms became affected, and for a short time the front of the chest very severely. The pains were erratic, but did not attack the hip and knees till ten days since. Since this attack he sweats often and feels chilly. Bowels regular; appetite and sleep good; pulse full and regular; urine clear and deposits no sediment.

3d. In addition to his other symptoms a slight attack of pleurodyny.—R. Vinum sem. colchici, ℥ss.; magnesiae, gr. x.; gutta nig. gt. viij.; aque cinnam. ℥j. M. sumat ter in die. Iiir. vi. lateri; *Acupuncture* at the affected part of left hip.

4th. The needle was pushed in, with considerable pain to the patient, up to the eye, in an obliquely horizontal direction, a few inches above and behind the trochanter, about where the sciatic nerve leaves the pelvis. It was withdrawn after being in twenty-four hours. While in, the part felt sore. Though watched some minutes after its insertion, I could not observe any action to be produced; the patient himself observed that he felt it moved. He considers that it has done him good, the pain and tenderness being considerably lessened. His chief cause of complaint now is the left wrist, which is stiff and painful; bowels confined; urine high-coloured, but clear.—Rep. Mist. Colch. He conti-

nued on the use of the colch.; sulph. mag. being added merely on one occasion, to open the bowels.

8th. All his pains much less, and can walk with comparative ease and very little pain to what he had when he came into the hospital; is desirous of having another needle inserted, having experienced so much benefit from the first.—Cont. Colch.

9th. Pain in the hip returning; the patient is very anxious to have another needle inserted. His other pains less.—Rep. Acupunct. et Mist. Colch.

11th. The needle was withdrawn, leaving some degree of soreness; his other pains are so trifling that this is almost his only complaint.—Omit. colch. et sumat sulph. quinix, gr. x.

13th. Has now no pain any where, and walks extremely well, without the least stiffness or pain.

Remarks.—Although colchicum was taken during the use of the needles, it is evident very little influence can be attributed to this medicine in alleviating the pain in the hip. For though by its means the cure of the other pains was effected, this one, after having been greatly relieved by the first needle, began again to be severe, while the patient was still using colchicum; and a second needle was inserted, at the man's anxious request, with complete relief.

Besides this case, I have seen acupuncturation successful in three others: the first that of Hogan, admitted Sept. 30th, 1830. This man had laboured under inflammation of the anterior crural nerve for two years, and had undergone medical treatment without relief. Four needles were now inserted at intervals; and at the end of a week he was dismissed cured. It is proper to add, that for two days he used Dover's powder and the warm bath. The second, John Darnford, under Mr. Jones's care, had laboured four months under pain of the hip, with some degree of lameness, and had used blisters and cupping without relief. The second day after admission, two needles having been inserted into the hip, all pain was removed from that part, and he could walk about perfectly well, his only complaint being a pain in the ankle. The last is that of James Toole, in whom one needle removed severe pain into the hip. This patient is under Mr. Bernard's care.

Much talent and ingenuity have been vainly exercised to discover the *modus operandi* of the needle while in the living fibre; any attempt, therefore, on my part, could only end in idle speculation. I trust, however, I shall be excused for venturing to offer a few remarks of a more practical nature; first, on the best manner of inserting the needles; secondly, on the number that should be employed, and the length of time they are to be left in; and thirdly, on those cases of a rheumatic character in which they are likely to be the most beneficial.

1st. It may be observed, that of the above four cases, the two last were much the most striking: the cure occupying only two days in the cases of Darnford and Toole. Many reasons might be brought forward as likely to account for this: the circumstances of the cases, &c. I am inclined, however, to attribute the speedy success of the remedy in a great measure to the different manner in which the needles were inserted. In Darnford's case, Dr. Graves desired the direction of the second needle to be less horizontal, and the next day all pain was removed. In Toole's case, the needle used was so long, and the direction such, as to render it probable that the sciatic nerve was pierced, (which Cloquet, I understand, for I could not get his book, considers desirable;) the relief was even more speedy.

In Dr. Renton's hands, acupuncturation has been eminently successful, instantaneous cures having been effected in many cases of long standing and severity, and which had resisted all the other remedies employed. It is difficult to collect from his paper in the Edinburgh Med. and Surg. Journal the precise manner in which he performed the operation. The direction of the needle, however, appears to have been perpendicular, or nearly so, as he lays great stress on the piercing of the muscular fibre, and passes the needle, not up to

the eye, but only to the depth of an inch, or an inch and a half, which, were the direction nearly horizontal, would scarcely be deep enough to attain his object. This much is certain, that it was done with a gentle rotatory motion, nor was any pain produced by the insertion of so many as ten needles.

Wishing to satisfy myself on this last head—the absence of pain—I inserted a needle into the centre of the calf of my leg, with a rotatory motion firmly pressing on the top, and about the depth of an inch and a half, the direction being exactly perpendicular. No *pain* was felt; the only feeling being one of great itching. What is curious is, that the needle, after having been in a minute, moved in a circular direction on its own axis; and a numb, aching sensation was experienced. It was only left in a couple of minutes, and then withdrawn with some pain and difficulty, as if it had been firmly grasped by the muscular fibres. The leg was the same after as before, and the place of the puncture discovered with difficulty. Now, as pain has not been proved to be necessary to the efficacy of acupuncture, but will often be a great obstacle to its use in cases where it would be likely to prove a safe, speedy, and efficacious remedy, the insertion of the needle by a rotatory motion—drilling, as it were—being unattended by any pain, must be considered preferable to thrusting it in, a mode which, from Pat. Rosseter's case, we may conceive to be a very painful operation. Dr. Renton's cases, along with the two above mentioned, would also go far to prove, that the more perpendicular the direction the better, in which case, too, the depth ought to be from an inch to an inch and a half.

With regard to the second point, the number of needles, and the time they are to remain in, there exists great difference of opinion. It is natural to suppose, that if one needle produces any effect, a more powerful one may be produced by many, which is in a great measure confirmed by the great success obtained by Dr. Renton, who used as many as ten in some instances, divided between the hip, thigh, and leg. Dr. Elliotson also uses a considerable number. The former gentleman only allowed them to remain in five or ten minutes; and how he succeeded has been already mentioned. On the other hand, in the Meath, they are left in twenty-four hours; and Dr. Elliotson, in one of his clinical lectures, observes that "if needles be merely thrust in, and allowed to remain only a short time, they will in general not be found of much service; they should be left in at least two hours." It is not easy to reconcile these differences. Most probably more depends on the manner of performing acupuncture than on any thing else, that the shorter time they are in the benefit should prove to be the greater. If the manner be good, it very likely matters little whether the needles remain in five minutes, or twenty-four hours, as far as the effect is concerned; but it is of great consequence as regards the patient's comfort, who would no doubt sleep better without, than with, nine or ten needles sticking in his body, setting aside the soreness which usually remains after a needle has been in so long. Dr. Elliotson, in spite of having discovered the value of leaving needles in long, appears in some cases to have had more perseverance than success, as he says, "I once ordered them daily for nine days before I succeeded." If this, and some other cases given by Dr. Elliotson, are compared with Dr. Renton's, it will be apparent that the remedy must have been differently applied. If performed in Dr. Renton's manner—that is, with half the needle out of the flesh, it is plain it would not be convenient to leave them in long; it is fortunate that there is no necessity, five or ten minutes having proved sufficient.

Lastly, Dr. Elliotson, in considering the cases most likely to be benefited by acupuncture, divides rheumatism into that attended with a sense of heat, and aggravated by its application; and that in which there is a feeling of coldness, the pain being relieved by warmth. The first of these he judges not likely to be benefited by the use of needles, but in the latter he thinks they will be found to prove very serviceable. But this distinction does not appear to have been acted on by Dr. Renton, as the case of the young woman given by him proves; nor do I recollect it to have been mentioned by Dr. Graves. It

is doubtful, therefore, how far it can be considered of importance; and it would probably be better to give the needles a fair trial in all cases of sciatica.—*Lond. Med. Gaz. July, 1831.*

17. *Neuralgia successfully treated with the Cyanuret of Potassium.*—Dr. LOMBARD, of Geneva, has employed the cyanuret of potassium with success in the treatment of several cases of neuralgia. Dr. L. applies it by friction; he uses a watery solution in an ointment, according to circumstances. The watery solution is of the strength of from one to four grains to the ounce of water, and the ointment is composed of from two to four grains of the salt to an ounce of lard. The aqueous solution he considers in general, the most prompt in its effects.

CASE I. *Facial Neuralgia instantaneously cured by the Hydrocyanate of Potash in Friction.*—A lady, of robust habit, forty-nine years of age, was a martyr to the most agonizing occasional attacks of pain in the space between the temporal region and the ciliary arch and maxilla. She used to scream violently in these torturing accessions, and sometimes lost all appearance of sensibility to such a degree that she has been supposed to be struck with apoplexy. Pulse 84; face rather flushed; no functional derangement. She was ordered to be rubbed with the aqueous solution, containing sixteen grains of cyanuret of potassium in four ounces of distilled water: it was rubbed on the forehead and cheek with a ball of cotton. The pain gave way almost instantaneously at the very first application, and seemed, as the patient said, to be rubbed away with the hand. A complete cure was effected by persevering a little while in the use of the remedy.

CASE II. *Periodic Neuralgia removed by the Ointment of the Cyanuret.*—The cure in this instance was less prompt, but not less certain. A lady, thirty-eight years of age, experienced the severest pains in the temporal region and upper jaw of the left side: they came on regularly every morning at four o'clock; went on increasing in severity until about ten, and did not cease till four in the afternoon. In that interval she laboured under anorexia, fever, head-ache, &c. and was almost driven distracted. She was bled to twelve ounces to relieve congestion, and then the ointment was applied to the cheek and temple. Two grains to the half ounce of lard were at first employed, but the improvement was more rapid under the application of ten grains to two ounces. Lotions of the cyanuret were eventually used, and the cure was complete.

CASE III. *Facial Neuralgia almost immediately cured.*—A lady, twenty years of age, suffered for several days, at the same hour, the most torturing pains in the orbital and supra-maxillary regions. Her face was much flushed, particularly on the affected side. Ten grains of the cyanuret were dissolved in four ounces of distilled water, and rubbed on with cotton. The application was quite successful.

CASE IV. *Chronic Occasional Neuralgia similarly treated.*—A woman, of eighty, who had long suffered from irregular attacks of this complaint, was cured by lotions and frictions, compounded pretty strongly, and continued for some time.

The cyanuret of potassium is contra-indicated where the nervous affection is complicated with inflammatory action, discharge, &c. It is a useful remedy in non-inflammatory rheumatism.

In sciatic neuralgia it has not been successful—nay, it has been necessarily discontinued, on account of some unpleasant accidents which it occasioned.

In white swelling, attended with acute pain, poultices moistened with the solution had the effect of producing much comfort, though the continuance of their application had no promise of amendment in it.

It is on the whole inferred that the calming properties of this remedy are superior to those of any other known, and that it should always have a preference where inflammation does not exist. Lotions, with hydrocyanic acid, are by no means to be compared with it, for the acid is decomposed with facility, and scarcely to be used without danger.

The first application of the cyanuret in the above way is claimed by M. Butigny and his brethren of Geneva, but it is disputed with them by Messrs. Robiquet, Villamé, and Bally of Paris—*Gazette des Hôpitaux, Medical Gazette, Sept. 1831.*

18. *New Mode of administering Calomel for the Cure of Syphilis.* By M. BIETT.—A butcher, ætat. twenty-eight, contracted syphilis in the course of the last year, and applying for relief to certain practitioners, who disgrace humanity by their vile charlatanism, obtained from them a large quantity of corrosive sublimate, disguised by the admixture of other drugs. The sores got well, or disappeared rather, under this treatment. But, some months after, the man suffered extremely from head-ache of the most excruciating intensity, from which emetics and bleeding procured him some alleviation. An eruption on the face now made its appearance, chiefly affecting the eyelids and the nose, and this brought him into the hospital. Here, as he showed symptoms of *gastro-enterite*, he was kept on slops, and such a regulated diet as seemed to check the progress of his disorder for a considerable time; all of a sudden, however, tubercles covered a great portion of his skin. He was ordered the *aqueous extract of opium*, with no success: then other methods, without amelioration. M. Biett now thought he should try a new mode of treatment, which suggested itself to him. This was to give the patient day after day an errhine, composed of a certain quantity of calomel, combined with an inert powder. In this way the man took successively, *eight, twelve, fifteen, twenty grains*, daily; and before a month was well elapsed, found his tubercles gone, his ulcerations cicatrized, and his general health so much improved that he was able to leave the hospital. He came in again subsequently for an inflammation of the synovial capsule of the knee, which was got down by cupping, leeching, and emollient applications. Some new pustules of his old complaint being observed, he was put on calomel once more, given in the manner just mentioned; and the consequence has been so satisfactory, that there seems to be no likelihood whatever of a return of the disorder.

M. Biett has employed calomel in powder in several other cases of secondary syphilis, and always with the most satisfactory results. Besides giving it in the form of an errhine, he applies it externally sometimes to venereal ulcers, and his success is truly remarkable.—*Lond. Med. Gaz. July, 1831, Gaz. des Hôpitaux.*

19. *Sulphate of Quinine as a remedy for Tænia.*—Carl Heinrich Kulka, by profession a butcher, was affected with an intermittent fever, for which Dr. Kunzsch, after the employment of some emetic and cathartic remedies, prescribed, during the apyrexia, two grain doses of quinine to be repeated every two hours. He took six of these powders before mid-day at which time his fever recurred with great violence, attended with obstinate vomiting and convulsions. On the next day he took six powders of three grains each, which were repeated every hour. This arrested the fever, but the medicine was continued for a few days in two grain doses, four portions of which were taken daily. After taking the sixth powder he was seized with a violent diarrhoea, by which he passed in the course of three days, more than a hundred yards of a broad dead tænia, (über 100 ellen eines breiten, todlén bandwurms abgingen.) This individual had never before presented any evidence of the existence of the worm which was passed.—*Journal für Chirurgie und Augenheilkunde, Band 14, heft 4.*

20. *Case of Epilepsy relieved by Nitrate of Silver.*—The following case of epilepsy depending upon a tumour of the skull, related by Dr. DARWALL, is interesting, inasmuch as it was *permanently relieved* by the nitrate of silver.

“December 18, 1825.—Thomas Godfrey, aged eighteen, he died on the fifteenth of this month from consumption. His history follows:—

“Till eight years of age he was very healthy, and as active as other children. At this period he was burnt on the cheek, and after his recovery, remaining

weak, the cold bath was ordered for him; his terror of the water was extreme; shortly after this time he lost the use of his lower extremities, and remained helpless for some months, till, by accident, falling from his chair, he struck his nose and caused a profuse epistaxis; from this period, he gradually recovered the use of his limbs, and was at length able to walk, as well as other children of his own age, but about every three weeks he had an attack of head-ache, with violent vomiting; these attacks returned regularly till the last four years, during which he had no return of pain or sickness, but frequently complained of giddiness and dimness of sight. He remained, however, able to work till the 25th of August, when I first saw him, and he had then violent symptoms of phthisis; the disease gradually gained ground. About the latter end of September, or beginning of October, he was seized with attacks of epilepsy, which came on regularly every day at two o'clock. After they had continued a fortnight, he was ordered five grains of *argentum nitratum* three times a day in a pill. The first day, after having taken two pills, he had a slight shivering at the usual time, but had no attack afterwards till his death; he discontinued the pills after a week or ten days. He died on the fifteenth of December, and he was examined last night: there was nothing worthy of remark in the chest. The usual appearance in patients dying from phthisis were present.

"*Head.*—The brain was unusually large; the ventricles were lined with a strong factitious membrane. They contained at least twelve ounces of fluid; the corpus callosum was much raised, and the septum lucidum had the appearance of a strong transparent membrane. The communication between the ventricles was quite open. Upon the superior anterior portion of the right lobe of the cerebellum, and strongly attached to the septum, and slightly attached to the cerebellum, was a large, hard, and externally cartilaginous tumour. The interior was composed of scrofulous matter. The tumour was the size of a large walnut."—*Midland Medical and Surgical Reporter*, May, 1831.

21. *Excoriations of the Mammæ.*—Dr. FEIST, of Bensheim, states, in the 4th Volume of the *Gemeinsame Zeitschrift für Geburtskunde*, that excoriations of the mammæ may be cured more promptly by a solution of corrosive sublimate than by any other means. He recommends two or three grains of the sublimate to be dissolved in an ounce of rose or distilled water. A little of this is to be warmed: a small piece of fine linen, several times folded, or a piece of lint wet with this, is to be applied so as to cover the excoriation. This application should be always made directly after suckling, and the breast must be carefully washed with tepid water or milk before applying the infant to the breast. Great care is of course always necessary in applying so powerful a remedy. When the excoriations are not very deep, Dr. F. says that they will be commonly cured by this means in a few days.

22. *Case of Pulmonary Affection relieved by Inhalation of Chlorine.*—Mr. RICHARD HARDY, of Islington, relates in the *London Medical Gazette*, for September last, the following case in which he employed the chlorine with advantage.

"Mrs. W., about thirty-five years of age, applied to me on 6th of June, complaining of an acute pain in the chest, with occasional palpitations of the heart, difficulty of breathing, accompanied with a quick, full, and irregular pulse, and a dry short cough. On my first visit I bled her freely, from a full stream, to twelve or fourteen ounces of blood, and ordered her the usual medicines common in those complaints. She had, a few years ago, an hæmoptysis or hæmorrhage from the lungs, which had now returned, but not to an alarming extent. She was also pregnant with her seventh or eighth child, which, however, was favourable to her. The remedies employed were of the active kind, and she found great benefit from them; and all the most urgent symptoms were greatly relieved, except the cough, which continued unabated in violence, and became the source of great uneasiness both to herself and to her husband. After a few days the cough, which at first was dry, was now attended with an

expectoration of mucus; which soon gave place to a most decided purulent discharge, streaked with blood; and in the course of the day, she expectorated at least a pint of fetid pus. She was in this state I dare say a month, when Dr. Fox was called in, and he prescribed a mild tonic mixture, as likewise a mixture for the cough; which, however, she did not continue a sufficient length of time to benefit her. The inhaling of chlorine had been named to her husband by me; and he became very anxious that its trial should be put to the proof, rather than persevere in the old plan, known as being "well established as unsuccessful;" I therefore decided that she should begin inhaling the chlorine without further delay; and I began first with twenty drops in a pint of boiling water, three times a day, gradually increasing it till three drachms were inhaled each time, with an addition of twenty drops of tinctura opii to the one going to bed. In this manner she continued to inhale it for two months, with a steady perseverance, to conquer the cough, which at length she accomplished, and lives to surprise her friends and relatives. She has since been delivered of a healthy child, and continues perfectly free from cough, and feels no other inconvenience than a wish to indulge her voracious appetite.

"This case is worthy of remark, because, if she had been treated in the old jog-trot plan, she must inevitably have sunk into her grave. I think every medical man would do well to endeavour to bring it into general use, because I am sure many persons might be restored to their families who otherwise would fall victims to the disease.

"I have another case under my care, but which has not been long enough under the action of the chlorine to enable me to report its progress; but the patient is a great deal better since she commenced using it."

23. *On the Connexion between Abdominal Diseases and Chronic Meningitis.*—We find in the *Midland Medical and Surgical Reporter*, for August last, some interesting remarks on this subject by Dr. HASTINGS. The intimate connexion that exists, between disorders of the digestive organs and of the cerebral system, has long been remarked by physicians. Of the various forms in which these complicated affections present themselves, there is one, termed rather indefinitely, determination of blood to the head, of which Dr. H. relates some cases, not undeserving attention in a pathological point of view, as they tend to show the necessity of great regard being had to the state of the cerebral system, whenever the alimentary functions are disturbed. "Whatever," says Dr. H. "may be the nature of the diseases designated by the foregoing vague terms, it is certain that in practice, it not unfrequently happens, that medical men are called upon to treat certain cases of the above nature, which commence in a very undefined manner. It is, for example, no uncommon thing to meet with persons of all ages and both sexes, but, I think, more especially females, whose complaints, for some time, have seemed to be almost entirely confined to certain uneasy feelings in the epigastric region. When that part is pressed, there is tenderness; after eating, there is fluttering and palpitation of the heart, with a sensation of sinking, and to this state is apt to succeed flushing of the face, and sometimes uneasy feelings in the head, without much pain.

"If the case be not at this time subjected to proper treatment, or even, occasionally, if proper treatment be adopted, there is likely to occur increased action of the carotid arteries, and very irregular spirits: a degree of elevation of mind, and hilarity of feeling, for a time, will come on, followed by a corresponding state of lowness. There is also the same inequality in the temperature of the body; alternate flushing and coldness being present, but, for the most part, the extremities are cold, and the face and head hot. The pulse, when the last mentioned symptoms have set in, is generally small and frequent; but occasionally it is not altered from its natural state. The tongue is furred, and rather clammy. At no longer period after this secondary state of what we may term cerebral irritation has commenced, it occasionally happens, that strongly-marked symptoms of excitement of the brain come on. Delirium, generally mild, but

of an insidious nature, sometimes makes its appearance, and ends in coma, and death.

"This has often struck me as a very interesting piece of pathology, and one that challenges close investigation, on account of its trivial appearance at the commencement, which, I have before observed, is simply an uneasy feeling, and, as the patient expresses it, a sinking at the pit of the stomach. I shall not now stay to endeavour to discover what is the connexion between the first simple state of uneasiness at the stomach, and the secondary one, vaguely called determination of blood to the head. My object, at present, being to call the attention of the reader to the simple fact of this connexion between the two parts.

"I am, also, desirous of pointing out, in what light this affection presents itself to my mind; and to show, from morbid anatomy, what the pathological state, frequently denominated determination of blood to the head, really is in this instance.

"In all cases of this kind which have terminated fatally, under my care, in the manner above pointed out, where post-mortem examination has taken place, it has never failed to appear, that the membranes of the brain have been much affected; that, in short, chronic inflammation had taken place in them, and had produced alteration of structure in those parts, particularly thickening of the arachnoid membrane, and effusion of a serous fluid between it and the pia mater; as also, sometimes, although this is a more uncommon occurrence, into the ventricles of the brain. I have in most of the cases, but not in all, discovered traces of disease in the abdomen, as in the liver, spleen, or small intestines."

Dr. H. is with great reason of opinion, that many of the symptoms called nervous, which are so harassing in some dyspeptic cases, may be traced to a slow alteration of structure of the membranes of the brain; and that it is of great importance to pay attention to the state of the cerebral system in such cases. "We should therefore" he says "in all affections of this kind, in addition to the remedies which the disorder of the digestive organ requires, consider in what manner the affection of the head is to be treated.

"Now, although the effect produced on the brain by these abdominal disorders, is cerebral congestion and slow inflammation of the membranes of the brain, in which condition the capillaries lose their tone in a great measure, and allow themselves to be dilated beyond their healthy calibre, by globules of blood, yet I have no reason to think that general bleeding is successful in mitigating, materially, the cephalic symptoms in those instances where the inflammation is of long standing, and the general strength has been impaired by prolonged indigestion. Local bleeding, however, by leeches or cupping, at the temples, or nape of the neck, and counter-irritation, by caustic or issue, in the neighbourhood of the head, is often very beneficial; but, I again repeat, that there is no one point in practice, of which I am more convinced, than that blood-letting requires, in this affection, to be used with great caution. It is my conviction, that it often proves prejudicial, by favouring the disposition, so fearful and fatal in its consequences, to serous effusion.

"Under these circumstances, viewing with much suspicion any considerable loss of blood in these cerebral affections, the necessity will be conceded, of employing most sedulously all other means that are likely to remove the inflamed state of the membranes of the brain. Cold applications to the surface of the scalp, after it has been shaved, I have found very efficacious. In all cases of this nature, where there is an augmentation of the temperature of the head, and flushing of the face, they should be unremittingly applied. Ice, mixed with common salt, confined in a large bladder, and kept constantly applied to the head, I have found a very convenient and efficient means of effecting this purpose. This application has proved, in my hands, conspicuously beneficial, in some instances of inflammation of the membranes of the brain, where considerations have deterred me from much blood-letting.

"From amongst others, I will cite the case of a young lady, whose recovery was forwarded by this remedy.

"CASE IV.—A young lady, aged thirty, had been complaining, for some time, of tender epigastrium, and fluttering and palpitation from slight causes. Some time afterwards, her face began to flush, which was soon followed by delirium. The tongue was much furred; stools very unhealthy; pulse 120, small at the wrist, very throbbing in the neck.

"She had been freely purged. Blood had been twice taken from the arm, and she had been cupped from the nape of the neck. The remedies, however, had not produced any good effect. The pulse got up to 140, and the extremities were cold, whilst the head was burning. It was manifest that further loss of blood could not be borne. The head was shaved, and ice was applied to it, so constantly, that the scalp was kept quite cold for twenty-four hours; during the greater part of which time the delirium was prevented, and the flushing of the face was much diminished. The carotid arteries did not pulsate so strongly. By a persevering use of the ice, and the occasional loss of small quantities of blood from the scalp, together with proper attention to the digestive organs, this young lady gradually recovered, and is now in a good state of health.

"The above fact, and several others of a like nature, have induced me to consider this external remedy as one of great power in the class of affections which I have been considering. It is, also, almost equally beneficial in the attack of pure phrenitis, although not in so conspicuous a manner, because, in this more acute disease, the strength of the system enables the patient to bear a free use of the lancet, and the more rapid march of the symptoms imperiously requires it.

"It is always desirable, when we can, to offer a rational explanation of the effects of a remedy, and it often leads us to still more successful applications of it. In this instance, it appears to me, that a very lucid explanation may be given of the *modus operandi* of this remedy, by experiment on living animals.

"From the account I have given of the dissection of these cases, it appears that, as far as the head is concerned, the symptoms are produced by an inflamed state of the membranes of the brain; or, in other words, by the capillary vessels of those parts being dilated, and congested with blood. Let us, then, observe, by aid of the microscope, the state of the blood-vessels when inflamed, and see in what manner they are affected by the application of ice to the affected part."

OPHTHALMOLOGY.

24. *Increased sensibility of the retina.* By R. MIDDLEMORE, Esq.—The term morbid sensibility of the retina applies to a variety of diseased conditions, which may or may not be attended with an organic change in the texture of the retina itself: for instance, the retina may possess an augmented sensibility to light, forming what is termed photophobia; it may be unusually sensitive to some particular colour, or to many colours; or it may be morbid as regards its sensibility only in reference to certain combinations of colour. Then, again, it is important to distinguish between increased and depraved sensibility, inasmuch as the former consists in an augmented sensation, from a natural degree of impress, whilst the other mistakes, distorts, and perverts the form, colour, magnitude, and distance of surrounding objects. Each of these states of the retina is, in nearly every instance, symptomatic of disorder, disease, or irritation of some near or distant organ or texture, scarcely ever arising from any functional or organic defect in the retina itself as a primitive disease; but as I intend to confine my observations as much as possible to the increased sensibility of the retina to light merely, I shall only adduce the more ordinary causes of this single phenomenon.

The retina of strumous children has frequently a much increased suscep-

tibility to light, without being combined with any change of texture: in the same way various morbid or irritable states of the uterine system lead to the production of this condition of intolerance of light; and the defects of this function to which I more particularly allude, are those in which the uterine secretion is altogether absent, or diminished in its quantity, to which must be added painful and irregular menstruation. I have seen very many cases of this description, where the retina has been so intolerant of light that the eyelids have been closed during the whole of the day with a spasmodic force equal to that which occurs in acute retinitis, so that any attempt at separating them has occasioned great pain, and induced severe spasm of the orbicularis palpebrarum, yet the eye itself has been perfectly free from inflammation, and quite natural in appearance, with the exception of a contracted state of the pupil. If such a condition of retina exists in combination with amenorrhœa, suitable remedies, directed to the torpid condition of the uterus, will, if they establish its natural function, quickly relieve the spasm of the orbicularis, and remove the augmented sensibility of the retina, and any attempt to restore the eye to its natural and healthy condition, under such circumstances, by local remedies, employed with a view of "deadening" the sensibility of the optic nerve, would be far from constituting the "most rational mode of treatment." A short time ago, I saw, in the absence of a medical friend, a young woman whose case is so fully illustrative of my views on this subject, that I shall briefly mention its outlines. She was a girl of a healthy appearance, and about nineteen years old, and had never yet menstruated, but suffered occasionally from pain in the loins and the lower part of the abdomen. The eyelids were forcibly closed; and from the frequent and powerful contraction of the orbicularis and corrugator muscles, they had acquired considerable power and thickness. The most careful attempt to examine the state of the eye occasioned extreme torment and profuse lachrymation, and was succeeded by a series of painful and spasmodic contractions of all the muscles of the eye-ball and lids; but there was no external inflammation, and no evidence of any deep-seated inflammatory mischief, although the pupil was extremely small and contracted. She had tried various local applications before I saw her without the slightest advantage, but was speedily cured by the use of Griffith's mixture and a few of the common pilulæ aloes c. myrrha. A young woman came to me a few days since from Westbromwich, with, to use her own words, a spasm of the eyelids; and after examining the state of the eye, (one organ only being affected,) and observing its freedom from inflammation I ascertained that she also was the subject of amenorrhœa; and although she has tried fomentations and collyria, of various kinds, for many months, I have little doubt of her speedy and perfect restoration by the employment of the constitutional treatment which the more important disease, (amenorrhœa,) of which the condition of the retina is merely a symptom, requires.

Without entering further into the details of cases illustrative of the various causes of an increased sensibility of the retina, I may state, 1st, that it may be produced by any source of gastric and intestinal irritation, the most frequent of which is, that condition of the mucous surfaces which occurs in strumous children, or is produced by the existence of worms; 2d, by general nervous excitement; 3d, by various morbid states of the sensorium; 4th, by various disordered, diseased, or irritable conditions of the uterine system; 5th, by inflammatory and other affections of certain parts of the eye; 6th, by disorder or disease of its own proper structure, and this is of all others the most infrequent cause of photophobia.

As regards the treatment of this increased sensibility of the retina, it will, of course, depend altogether on the cause producing it; but as in nearly every instance it is but a symptomatic affection—a symptom of disease or disorder in some other part—local treatment, in the general, must be of a very subordinate character.

It is not, however, my intention to pursue this part of the subject in detail; for the adoption of such a course would be absolutely detaching one symptom of

a disease from its associates for the purpose of distinct treatment; it would, in short, be making a separate disease of a symptom without any good or sufficient reason for so doing. The treatment of the scrofulous, the gastric, and the uterine photophobia, and, indeed, almost all its other forms, is, in fact, but the treatment of the disordered or diseased condition of that organ, or that state of the system, of which it is but an occasional symptom; and which must be conducted on the same principles which would guide us in the management of the same cases where no affection of the retina existed.—*Lond. Med. Gaz. July, 1831.*

25. *Chloride of Lime in Purulent Ophthalmia.*—We noticed, in a preceding number of this Journal, the observations of Edward Græfe on the employment of the chloride of lime, in the treatment of gonorrhœa. We now call the attention of our readers to the remarks of Dr. HERZBERG, of Berlin, relative to the use of the same article, in purulent ophthalmia. He was originally induced to give it a trial, in these cases, from observing its great efficacy in checking all profuse mucous secretions. The following cases are detailed, in proof of the remedy:—

Traugott Hirsche, aged twenty-four years, of a healthy and robust constitution, had spent the early part of his life without being affected with any very important disease. While stationed in the garrison, at Berlin, he became affected with a severe ophthalmic inflammation, which was supposed to be of the rheumatic kind, and for which he was confined three weeks in a military hospital. On the 8th of May, a few days after he had connexion with a female, he observed a slight discharge from the urethra. Under these circumstances, influenced by the advice of an old woman, who recommended him to wash his inflamed eyes with his urine, he performed that operation several times: but the consequence, which, in most cases, would perhaps have presented nothing remarkable, were here truly formidable, in consequence of the gonorrhœal affection under which the patient laboured. A few hours after the urine had been applied to the inflamed organ a heavy smarting sensation was experienced about the internal angle of both eyes. To relieve this pain, he repeated the application of the urine, and in the course of a quarter of an hour the pain was greatly increased, and the eyes became red, and intolerant of light. In this condition he remained twenty-four hours, without calling for surgical aid. When Dr. Herzberg first saw him, the upper eyelid was swollen like a bladder, and was folded, as it were, over the lower lid which was also swollen. The cilia were directed inwards, and from the eye a yellowish coloured purulent fluid was discharged, similar in its characters to the discharge from the urethra. When the lids were separated, which was difficult to accomplish, this fluid flowed away in a stream. The conjunctiva of the lids and of the ball of the eye was rendered so prominent, by the tumefaction, as to form a kind of dyke. It presented a dark red colour, and a profuse greenish-yellow, purulent secretion flowed from every point. Profoundly situated in the ball of the eye, a darkish coloured spot could be discerned, which was supposed to be the cornea. These symptoms were most strongly developed in the right eye, though the patient complained of a painful sensation of pressure in both. The pulse was full, hard, and frequent, and there was a frequent sensation of chilliness. The discharge from the urethra continued. The patient was bled to the amount of four porringers, was directed to take two grains of calomel, four times a day, and was put upon a severe diet. As a local application, the following was ordered to be injected into the eye, and applied externally, every ten minutes: R. Calc. oxymuriatic, ℥ss.; Aq. distill. ℥vj.; Solve. In less than two hours the discharge assumed a whitish appearance. On the 11th, the quantity of the secretion was greatly diminished, and it was much thinner and less consistent than it had been before. The tumefaction of the conjunctiva had subsided, still, however, the condition of the ball of the eye could not be determined. As the pain in the right eye continued, after the venesection, twelve leeches were applied in its vicinity, and the other remedies were continued. 12th. The swelling still more abated; the discharge of a whitish ap-

pearance, and less copious. In proportion as the tumefaction subsided, the cornea was exposed, covered with ulcers. Tinct. opii. ʒi. was added to the collyrium, which was directed to be continued as before. From this time, the improvement was progressive. On the sixth day after the commencement of the calomel, evidences of salivation making their appearance, that remedy was discontinued, and a gentle saline cathartic was directed. The collyrium was continued until the 15th day from the commencement, when there being no further discharge, it was left off, and the tinct. opii. crocata was applied to the cornea, by means of a fine camel hair pencil. This was continued until the 8th of May, when the ulcers of the cornea were entirely healed.

In the following case, the syphilitic character of the disease is doubtful, though the father was affected with it, and the mother with fluor albus.

A child of the name of L. Burnmeister, became affected, on the evening of the third day after birth, with frequent sneezing, with redness of the eyes, and profuse lachrymal discharge. The inflammation progressed rapidly, and by the fourth day, the lids were swollen to the size of a walnut, and a profuse blennorrhœal discharge issued from the eye. The ball of the organ was entirely concealed by the lids, which could not be opened. Two leeches were applied to each eye, and one grain of calomel was directed to be given, three times a day. The following collyrium was ordered to be injected between the lids, and applied externally, every ten minutes: R. Calcaria oxymuriat. ʒi.; Aq. distil. ʒvj. Solve. In thirty-four hours the character of the discharges had improved, and the quantity was considerably diminished. The tumefaction, and other symptoms subsided, from day to day. The wash was finally exchanged for the tinct. opii. simp. which was applied by means of a camel hair pencil, and by the 14th day, the cure was completed.

In the case of Otto Schoppen, aged three weeks, where the eyes were in a similar condition, the chloride of lime, unassisted by any other remedy, produced a complete cure in a few days.

Maria Küstern, aged six months, of a feeble constitution, and born of a mother who suffered much from fluor albus, became affected, on the third day after birth, with the ophthalmia neonatorum. Against this all the usual domestic remedies were employed for the space of eight weeks, and amongst others the urine of the whole family, from the father and mother down. The same sponge which was employed in washing the child's eye, the mother used to wash her face. In twenty-four hours, the left eye was affected with an acute inflammation, and in forty-eight hours, an intense ophthalmic blennorrhœa was established. In the case of the child, the chloride of lime was employed, as above; but in that of the mother, six leeches were applied to each eye, and two grains of calomel were given every three hours; ʒij. chloride of lime were dissolved in six ounces of water, for a collyrium. On the third day, the calomel was discontinued, and by the tenth day, both mother and child were cured.

The result of these cases, as well as of some others to be found in the records of the day, seem to speak favourably of the remedy in question, both in the gonorrhœal ophthalmia, and in the simple mucous form of the disease. It deserves, at least, a fair trial.—*Journal für Chirurgie und Augenheilkunde, Band 14. heft 4.*

26. *Inflammation of the Eyes from Crusta Lactea.*—M. STEINHEIM of Altona relates in the 14th Vol. of the *Journal für Chirurgie und Augenheilkunde*, the case of a child whose body was covered with crusta lactea; this eruption extended gradually and produced inflammation of the conjunctiva with copious purulent discharge. The lids swelled and concealed the eye; and when after some weeks the inflammation abated and the swelling disappeared, Dr. S. found that the left eye was entirely destroyed. Warned by this accident, Dr. S. has since used, with entire success, in cases of crusta lactea menacing the eyes, the application of a weak mercurial ointment to the eyelids and corners of the eyes, which prevents the extension of the disease to these organs without suppressing it on other parts of the face.

SURGERY.

27. *Case of Inguinal Aneurism in which the External Iliac Artery was tied.*—Patrick Connell, æt. thirty-eight, was admitted into St. George's Hospital, February 15th, 1828, under the care of Mr. BRODIE. He stated that in the month of October last he was much exposed to cold and damp in Whitecross Prison, and at that time was particularly affected with "rheumatic pains," particularly in the left leg. About the middle of November, whilst making some exertion, he felt something "give way" in the left groin, and soon afterwards noticed a small pulsating tumour there. It increased gradually in size for the first fortnight, and then remained stationary, or nearly so, until the beginning of the present month, when it became much more swollen and painful, and the limb generally œdematous. He applied eight leeches to the groin with some relief, and took a purge or two, but has done nothing further for the complaint, and has followed his ordinary occupation until very lately.

Such was the history of the disease given by the patient; and the following were the symptoms upon his admission:—In the left groin was a hard pulsating tumour, nearly filling up the triangular space between the sartorius and pectineus muscles. The margin of the tumour was tolerably well defined; its form was triangular, and its surface irregular, being more prominent above and below than in the centre. It appeared to be somewhat abruptly bounded by Ponpart's ligament above; and extended downwards for better than two inches, probably to the point where the profunda femoris is given off. It was reducible in a great measure by pressure; the pulsation was distinct, and apparently very near the surface, showing that no great quantity of coagulum had been deposited. Pressure upon the external iliac artery completely arrested the pulsation of the tumour, but did not materially diminish its size; whilst pressure on the femoral below only lessened the pulsation. The whole limb was greatly swollen and rather tense, while the foot was œdematous and numb. There was much stiffness, with tingling, and pain shooting from the groin round to the outer side of the thigh, and down to the outside of the knee. His health had always been good; but he looked sallow and anxious, had been suffering many privations, and a great deal of mental distress. The appetite was indifferent; he did not sleep well; the bowels were costive, tongue red, and the pulse had the aneurismal jerk.

Under these circumstances, he was bled once or twice, and purged; and on the 21st, the pulse being quieter, and the patient anxious for the operation, the external iliac artery was tied by Mr. Brodie.

The method of operating was that which has been recommended by Mr. Abernethy: the incision, however, being somewhat semi-lunar, and placed rather more on the iliac side of the vessel than in that gentleman's operations. The oblique and transversalis muscles were carefully cut through, the peritoneum cautiously raised from the belly of the iliac and psoas muscles, and the artery discovered pulsating on the inner side of the latter. Care was required in passing the needle round the vessel, in consequence of its having contracted some adhesions to the vein, &c.; but this being done, and the ligature, which was a single one, drawn tight, all pulsation ceased immediately in the tumour, though it did not diminish much in size. The lips of the wound were brought together by three sutures and adhesive straps; one end of the ligature brought out at the wound, the other having been cut short; and the patient removed to bed. The operation was performed with great facility, and the patient bore it remarkably well; whilst the pain in the thigh, &c. almost instantaneously ceased. In the evening the limb was colder than the other; he had been sick, and was restless. Pulse a little harder than in the morning. A flannel roller had been applied.

22d. He passed a better night, but his appearance is far from being satisfactory this morning; his breathing is oppressed; he speaks in an under tone, as

if fearful of calling into action the respiratory muscles; and there is that playing of the nostrils described by Mr. CHARLES BELL as marking an insidious affection of the chest. There is pain in the right side and loins on taking in a full breath, as well as in attempting to cough, which he is afraid to do; thirst; tongue coated; pulse ninety, corded, and full. Mr. Brodie, on seeing the patient at one p. m., immediately directed a vein to be opened, and, after eighteen ounces of blood had been abstracted, the pain in the side was relieved, and the countenance clearer.—II. Sennæ, sextis horis.

Vespere.—The bleeding has had a most decided effect, the pain being much relieved, and the hardness of the pulse diminished. He has been asleep during a great part of the day, and feels much better this evening. The bowels have not yet been opened. The blood drawn is buffed.—Repet. Haust. Sennæ.

We take so much of the history of this case from the *London Medical and Physical Journal*, for April, 1828; the result of the case is given by Mr. LAIDLAW in the same Journal for Oct. last, Mr. L. states that after the performance of the operation, the patient who had always been very unhealthy and been exposed to many hardships, was never completely well, constantly suffering from cough and affection of the lungs: his legs became œdematous; and continuing thus to get worse, in the early part of the present year, (1831), he became dropsical and died. Upon examining the remains of the aneurismal tumour, it was found to be somewhat larger than a pigeon's egg, situated immediately below Poupart's ligament, and filled with a firm coagulum. Upon tracing the vessels connected with it, it was found that in this case the external iliac artery, instead of, as usual, giving off the epigastric and circumflexa ili, and then becoming the common femoral artery, divided all at once into three large vessels, one of which again dividing, formed the epigastric and circumflexa ili; another formed the profunda femoris, and the third continued its course as the superficial femoral artery. It was at this point of general division that the aneurism had formed, so that, in the preparation, the cut ends of the several vessels are seen hanging from the tumor. The external iliac artery was entirely obliterated, from about three-quarters of an inch above the tumour; the internal iliac was nearly twice as large as it is in ordinary circumstances, but appeared to be perfectly healthy; nor was there any appearance of disease found in the aorta. The operation had been most completely successful, and it would have been satisfactory to trace the anastomosis of the vessels; but the relatives of the deceased having a great objection to allowing an examination, it was necessary to perform it clandestinely, and the incision having been made in the loins only sufficiently large to admit the hand, and so remove the preparation, any further dissection was impossible.

28. *Extirpation of an Osteo-Sarcomatous Jaw.* By Professor REGNOLI.—Giulia A., aged about twenty-two, was for the first seventeen years of her life a perfectly healthy girl. At that period she received a blow on the right cheek; after which she began to feel in the incisor teeth of that side, a pain, not very severe, but constant, and annoying her with the sensation of cold when in the act of drinking. A portion of the gum began gradually to swell, and there was formed ere long a soft and circumscribed tumour, about the size of a small nut, just over the alveolar processes of the incisor teeth. An incision being made into it, gave issue to nothing but an abundance of blood, which the surgeon was obliged to staunch with nitrate of silver. The repeated application of the same caustic destroyed the tumour in less than a month, but the pain still continued fixed and constant in the same spot. In the course of six weeks the tumour showed itself afresh, and with a growth far more rapid than ever. The catamenia now became suppressed, and hæmoptysis and convulsions began to distress the patient. She was advised by a physician to have the tumour extirpated and cauterized, but the sight of the red hot iron threw her into her habitual convulsions, and the operator, after removing as much as he could of the diseased part, was obliged to be content with the application of a concentrated

acid and some *lapis infernalis*. But the tumour grew again; and, moreover, there was perceptible about the base of the right ala of the nose another tumour, which, after remaining stationary for a time, began to grow apace, and painfully to afflict the patient. In eighteen months it attained so alarming a magnitude that the poor girl was falling into extreme despondency, and almost cursed her existence. She, however, was aware that she still had a chance of her life by extirpation, and accordingly determined to make one more trial of art. With this view she entered the hospital at Pisa.

"I saw her, (says Signor Regnoli,) for the first time on the 6th of April, 1831. The disease consisted in this tumour of the right jaw, intimately connected with the bone, at its base about the size of an ordinary apple, extending from the second molar of the right side to the canine tooth on the left, lifting up the ala of the nose, and turning aside the cartilages to the left. The teeth within this space were very loose, but unaltered in colour or form; their gummy sockets, however, as well as the internal membrane of the upper lip, were highly vascular. The tumour felt hot to the touch, soft in some places, hard in others; inelastic, immovable, unequal, pulsating too in some degree in its lower part, (owing to the increase of calibre in the arteries of the gums,) and bloated with the quantity of blood which it contained. The patient occasionally suffered much from lancinating pains.

"It was clearly a case of osteo-sarcoma; and the lymphatic system and general health of the patient being good—no fever—no want of appetite—no wakefulness—the catamenia, too, being returned—and there being but few accessions now of either the hæmoptysis or convulsions, I made up my mind to operate; and the patient consenting eagerly to the proposal, she was simply prepared for the occasion with a *purgative oil draught*.

"On the 11th April, having placed her in a suitable position, I stretched and raised the upper lip, and with the common convex bistoury divided the integuments along the right lateral portion of the nose, beginning immediately beneath the lower eyelid. This division enabled me to separate readily the sound from the unsound tissues, to dissect the cartilages of the nose, and to distinguish the precise limits of the diseased part. Following the tumour, always though within the sound bone, I carried the bistoury through the periosteum all round; and then, with chisel and mallet, circumscribed the tumour, first in the right maxilla, then in the left, and lastly in the palatine vault. I detached it, and was particularly anxious to do so speedily, in order to save the patient's blood, for it would not have been easy to deliberately secure the arteries which went to the centre of the tumour. The hæmorrhage was checked with the actual cautery, applied only to the points of attachment. The division of the lip and cheek was united by the first intention by means of the twisted suture; and in order to support the lip on its posterior side, I merely put a little charpie into the cavity left by the tumour. Louis's bandage for hare-lip completed the arrangement.

"On examining the tumour, our diagnosis was confirmed. I took a pair of compasses, in presence of the pupils, and measuring the dimensions of the diseased mass, applied them to the face of a young woman of the same age as the patient. We found then that the bistoury had been carried close by the base of the apophysis of the upper jaw, between the first and second molar teeth; had opened partly the antrum of Highmore, and taken off a portion of the middle olfactory partition: that on the left maxilla it had been driven between the canine tooth and the second incisor: thus a portion of the alveolar processes, containing six teeth, had been carried away along with the margin of the anterior opening of the nostrils. In short, it appeared that all had been removed that was contained between the palatine apophyses of the two maxillæ.

"The patient during the whole of the operation displayed the greatest courage, and never once gave sign of agony, except just when a number of filaments of the trifacial nerve were divided. She was conveyed to a separate ward, and committed to the special charge of two of the pupils.

"Apprehensive of hæmorrhage and inflammation, I ordered her to have ice

constantly in her mouth. I directed her diet to be rigorously low, chiefly consisting of copious cooling drinks; and positively forbade all use of speech. Half an hour after the operation, she complained of pain in the wound, extending into the head; but there was no acceleration of pulse—no nervous symptom. In the evening, however, the pulse denoted a febrile accession. *Venesection to ten ounces* procured her repose: and next morning she was free from fever, and had nothing to complain of except the inconvenience of her drink getting into her nostrils, notwithstanding the precaution we took of giving her all fluids out of a spouted cup. At eleven o'clock, same night, she suddenly started delirious from her sleep, and got up to run away; her eyes were motionless and blood-shot—her face flushed. Ordered *some drops of liquid laudanum*. When she came to herself in the course of an hour, she gave me to understand that she was troubled with the smell of the bandage: I removed it to satisfy her. After this she slept quietly till next day. On the 13th, in the morning, she was without fever—without pain—she was even in excellent spirits: but as the bowels seemed to be a little out of order, I ordered her *an ounce of cream of tartar*, which had the desired effect. The eschars from the cauterization yielding a thin, fetid discharge, I employed frequent injections of warm water in the nasal passages. In the evening some febrile symptoms were dissipated by a smart sweat. 14th, Dressed again. 15th, The patient in such good spirits, and so disposed to laughter, that it seemed better not to remove the needles, though the cicatrix was united. 16th, The needles removed, and simple sticking plaster left on. *A lavement*, which removed a slight pain of the head. On the 20th, some portions of bone, necrosed by the cautery, came away, and in their place were seen healthy granulations. By the 30th, the communication between the mouth and the nostrils no longer existed.

“May 12th.—It was thought necessary to extract some little splinters of the palatine apophysis, which retarded complete cicatrization. The cicatrix is now become solid, whitish, not painful to the touch, and altogether of a very favourable description. The face is less disfigured than it was by the tumour; the nose has resumed its natural position; the nostrils are unembarrassed; and nothing is very remarkable in the young woman's countenance except the scar, and the depression of the cheek and lip: the lip is by no means destitute of motion, though it is certainly not unimpeded. The articulation is but little affected; mastication is performed pretty well with the molars alone. The patient, in fine, has recovered her flesh and complexion; and all her functions proceed regularly, as in a state of good health.”—*London Med. Gaz.—Gazette des Hôpitaux*.

29. *Aneurisma of the Right Axillary Artery cured by Tying the Subclavian Artery*. The subject of this case was a man sixty-three years of age. The tumour presented the section of an oblate spheroid, of about the size of a large orange; it extended from the clavicle into the axilla, and was attended with considerable unremitting pain, almost utterly precluding sleep. The disease was attributed to a hurt received some time before; on careful examination, no disease of any other artery or of the heart, was discoverable. The operation was performed on the 17th Dec. 1830.

“Sixty minims of landanum were given immediately after the operation, and which dose was repeated an hour or two afterwards, but without producing any considerable relief. The same night, the patient complaining of increase of pain in the wound, with considerable difficulty of deglutition, and some dyspnoea, and a severe pain extending from the left hypochondrium to the right shoulder, he was bled to the extent of ℥xviij . and which operation was repeated the following morning, in both instances with the greatest possible relief. He was of course restricted to a rigidly antiphlogistic diet and regimen, and the bowels relieved by repeated doses of a saline aperient, combined with antimony, preceded over night by an alterative aperient pill.

“From the above date, little remains to be observed, as to the mere history

of the case, excepting that the above symptoms, though decreasing in violence, continuing from time to time to recur, were obviated, or reduced by various modifications of the same means; while, in addition, local painful affections were relieved successively, by the employment of warm spirituous fomentations, liniments, dry friction, the use of flannel, and the last ten days, by the warm bath.

"The last ligature came away on the twenty-ninth of January, and there now remains only the most minute moisture on the spot from which it escaped."

The operator and narrator of this case, W. BLAND, Esq. attributes its successful issue, in a particular manner, to the very early and repeated employment of the lancet, the use of spirituous fomentations to the limb, and the support given to it, by means of a broad flannel sling, by which the arm was steadily supported without sustaining any disagreeable pressure: this, in a case of unavoidably long duration, though apparently trivial in itself, was a matter of great moment. There is yet another circumstance, he adds, to which I shall beg to call attention: the careful, but gentlest possible expulsion, by means of pressure, of as much of the discharge as practicable, from the wound, each time that it is dressed; by which the danger to be dreaded from the unpropitious direction of the external opening of the wound, (which instead of being in a depending situation, is at all times almost perpendicular above its fundus), is in a great measure, if not entirely obviated.

There was a very slight expectoration of blood, on the 5th of this month, (February,) but which was immediately obviated by bleeding, and has neither returned nor evinced any tendency to return.—*London Med. and Surg. Journ.* Oct. 1831.

30. *Nervous Tubercle*.—The following case of this is related by Mr. STONE in the *Edinburgh Medical and Surgical Journal*, for October last. Mary Comrie, aged seventeen, applied at the hospital on the 23d of March, on account of a small moveable subcutaneous tumour, about the size of a large pea. It was seated a little below the middle of the left leg on its outer side. It was of very firm consistence, and adhered with its external surface to the skin. When pressed, it was moderately painful, but occasionally gave rise to paroxysms of the most exquisite suffering, far exceeding, though somewhat resembling, the severest tooth-ache. These attacks lasted various periods, from half an hour to several hours, and were induced by slight external irritations, such as gentle rubbing—or mental agitations, such as sudden alarm; but frequently commenced without any cause that could be perceived. It is remarkable that mental emotions were no less powerful in cutting short the fits than in exciting them. She had not perceived any difference at the menstrual periods.

She observed the tumour two years ago; her attention being directed to it by the pain; and when first noticed, it was as large as at any time afterwards.

The tumour when removed exhibited a pearly lustre externally, and possessed a dense cartilaginous consistence. The patient was immediately relieved from all her uneasy feelings.

31. *Luxation of the Humerus of forty-eight days Duration successfully Reduced*.—A case of this is related by M. BRESCHET in the *Journal Universel et Hebdomadaire*, for April last. The subject of it was a man sixty-nine years of age; the luxation was downwards and forwards; and the reduction was unattended by ill consequences. The method adopted was that always employed at the Hôtel Dieu and which has generally succeeded there and has never been productive of injury. A compress covered with simple cerate is placed in the arm pit of the luxated arm, the counter-extending band is placed over this, and fastened to an iron ring in the wall so that the counter-extending force is fixed. Extension is made by three or four assistants by means of a band tied around the wrist. The attention of the patient is diverted from the efforts at luxation by some means, such as accusing him of not attending to the regimen prescribed for him, &c.

In the case under consideration, the first attempt, which was continued for two or three minutes, did not succeed, but a second effected the reduction.

MEDICAL JURISPRUDENCE.

32. *On the Detection and Identification of Arsenic in Complex Organic Mixtures.*—The *London Medical Gazette*, for Sept. last, contains some interesting observations on this important subject, by Dr. ROBERT VENABLES. "None but they who have practically satisfied themselves of the fact," says Dr. V. "would credit the minute—I may almost say the evanescent—proportion in which poisons are usually found in the contents or tissues of the viscera of those who perish by their fatal operation. This arises from a variety of causes; but the two principal may be considered as vomiting and decomposition. By the former the great bulk of the poison is ejected, and frequently lost before the medical jurist arrives, or has an opportunity of providing against such a contingency. Indeed, vomiting—at least spontaneous vomiting—occurs under circumstances, and probably in situations, which preclude the possibility of identifying the vomited matters.

"The decomposition of the poison may be either natural or artificial. Natural decomposition is the result of the mutual agency of the stomach with its contents, and the poison, upon each other. In some instances the poison is the sole active agent, the decomposition arising from its action, (generally a corrosive one,) upon the tissues or substance of the viscera. Artificial decomposition is caused by the injection of antidotes, medicinal or alimentary, either purposely administered, or taken as food in the usual course. By these agencies the poison is so diminished in quantity, and so altered in both its sensible characters and its chemical constitution, as in no small degree to embarrass the medical jurist, and to render his duties not only intricate, but awfully painful and distressing.

"The two great difficulties then, in the way of medico-legal analysis, is the alteration in chemical constitution, and the minuteness of the quantity, compared with the bulk and complexity of the organic matters. The former may be easily obviated, because we can readily ascertain by experiment, the nature of the chemical decompositions; and being thus acquainted with the alterations so induced, we can provide the means of remedying these inconveniences. But the minuteness of the quantity, compared with the bulk and complexity of the matters for assay, is a source of embarrassment, against which we can oppose nothing but patience, assiduity, and the dexterity resulting from industry in the constant and habitual practice of medico-legal researches."

Dr. V. speaks in the highest terms of Dr. Christison's directions for the detection of poisons, but states, that there are some imperfections in it, which it is important, if possible, to remedy. "One is the occasional presence of organic products in intimate mixture, or combination with the precipitated sulphuret; and from which, in some peculiar instances, this process will not wholly free it. This will give rise to empyreuma, which, when the quantity of sulphuret is minute, will render the subsequent sublimation of reduced arsenic precarious. In some cases it is utterly impossible to wholly deprive the solution of animal or vegetable matter, and it will remain, and some of it fall down in combination or mixture with the sulphuret. Another difficulty is, that unless very great care be taken in regulating and applying the heat, so that the sublimation do not begin before the flux has attained a sufficient temperature, a portion of the sulphuret escapes decomposition, and sublimes, or sulphur alone sublimes, and when the crust of sublimed arsenic is very minute, obscures the result. But a most important objection is, that the sulphuret cannot be forced to yield above a third of the arsenic it contains.*** I have, after much and laborious inquiry, been induced to prefer the *arseniate of silver*, as superior to

every other preparation, for the purposes of medico-legal reduction; and this for the following reasons:—First, its bulk is sufficient to enable us to operate upon minute quantities with infinitely greater ease and precision. Secondly, its superior specific gravity causes it to subside more quickly, even from saturated saline solutions; and hence it is more easily and speedily collected. Thirdly, it parts with moisture more readily, and does not cake, or attach itself to the capsule with that obstinate adhesion which renders the collection of the entire sulphuret, under similar circumstances so difficult; on the contrary, it is easily collected, and admits of being dried so thoroughly as to yield but little moisture. Fourthly, the salt itself presents an almost distinctive character in its brick-red colour. Fifthly, it yields on reduction, (cat. par.) nearly three times the quantity of metallic arsenic afforded by any other compound, (so far as I know,) arseniate of lead being excepted; and nearly half as much more as even this salt.

“The process, therefore, which I find to answer best is the following:—Dr. Christison’s directions are to be observed, and his plan precisely followed, till the sulphuret of arsenic is precipitated. The precipitate is to be allowed to subside, and the organic liquid poured off. The precipitate is then to be washed by the alternate affusion and decantation of distilled water after each subsidence. The sulphuret, after being thoroughly washed, is to be transferred into a deflagrating tube. When the quantity is very minute, its transfer is effected without loss in the following manner:—diluted ammonia is to be added till the whole of the sulphuret is dissolved, and the solution poured into the deflagrating tube; the precipitating jar is to be washed out with distilled water, the washings being added to the solutions in the deflagrating tube; acetic acid being now added in excess, the tube, with its contents, is to be gently heated, when the sulphuret is immediately precipitated.* The acetate of ammonia is to be poured off, and the precipitate is to be well washed in distilled water; the water is to be poured off; the sulphuret remaining at the bottom of the tube is to be rendered as dry as possible, by placing the tube by the side of a stove.† Nitrate of potass is next to be added, with which the sulphuret is to be deflagrated. By this process the arsenic of the sulphuret is peroxidated, and converted into arsenic acid, which unites with the potass set at liberty during the operation, and forms *arseniate* of potass. As soon as the nitrous acid, formed by the action of the nitrous gas, (evolved by the decomposition of the nitric acid of the nitre,) upon the atmospheric air is dissipated, and the tube has cooled, hot distilled water is to be added till the entire residue is dissolved. If the solution should be alkaline, which may happen if vegetable or other organic matters were present, in consequence of the formation of both carbonic acid and potass, or ammonia, a little acetic acid should be added, so as to render the solution perfectly neutral, or even very faintly acidulous. If the solution be now touched on the surface with a stick of lunar caustic, immediately a dense heavy brick-red precipitate falls down from the point of contact. The precipitate should be allowed to subside, and the caustic applied after each subsidence till the brick-red powder ceases to be formed. When the powder has subsided, the nitrous solution is to be poured off, and the precipitate is then to be well washed in distilled water till the washings, when evaporated upon platina foil, cease to leave any residue. The precipitate, which is arseniate of silver, perfectly pure, or nearly so, may now be transferred to a watch crystal, and dried either by the side of a stove or in a vapour bath. The dried salt is next to be mixed with boracic acid and recently-ignited charcoal, put into a proper tube, and reduced. Towards the end, the reduction may be aided by the cautious application of the flame of the blow-pipe. By this means a well-defined crust of metallic arsenic will be found lining the upper and narrow por-

* Boiling alone, by expelling the ammonia, would precipitate the sulphuret, but still not so completely as by adding acetic acid in slight excess.

† Ether frequently assists the drying of precipitates.

tion of the tube; nor is there the slightest obstruction to the reduction from the presence of impurities."

The process here detailed, says Dr. V. will only apply to the arsenous acid and its soluble compounds; nitrate of silver precipitating pure arsenic, and by single decomposition. "Hence it is evident," he adds, "that if arsenic acid existed in the mixture, or any of its compounds, the precipitation of the vegeto-animal matter by nitrate of silver would at the same time carry down the whole of the arsenic acid, while the fluid for assay would be thus entirely freed from arsenic, and of course afford no indications whatever upon applying sulphuretted hydrogen. In order to obviate this inconvenience, when the circumstances are such as to afford no clue to the preparation to be sought for, or even but doubtful information on this subject, I should advise the following, which I have found to answer under almost every possible contingency. It is a modification of one of Orfila's processes, and will apply, in its extended form, to every preparation of arsenic.

"The contents and tissues of the stomach, the solids being previously cut into small shreds, are to be well boiled in nitric acid till as much of the animal matter as possible has been destroyed, distilled water being added according to circumstances. It is now to be filtered, potass added in slight excess to the filtered fluid; and it is next to be acidulated with acetic acid, when a stream of sulphuretted hydrogen gas is to be passed through it. If a yellow precipitate separate, it should be deflagrated with nitre, and treated as already directed in a preceding part of this paper.

"By the boiling with nitric acid, not only all the preparations of arsenic, soluble in this menstruum, and water, are taken up, but by far the greater proportion of the organic matters are destroyed. The soluble preparations of arsenic pass through the filter, and are subsequently precipitated by the sulphuretted hydrogen.* Such preparations, however, as may not be soluble in nitric acid and water, remain upon the filter, consequently it becomes an object of medical jurisprudence to determine their presence. For this purpose the products retained on the filter should be collected and dried, and they should then be projected in small masses, or portions at a time, into a Florence flask, containing a tolerably large proportion of nitre in a state of fusion, containing the heat. By these means only slight scintillations take place, and all the organic matter is destroyed, being converted into water, carbonic acid, potass, and ammonia. Any arsenic, under whatever variety or form it may have been present, is at the same time peroxidized and converted into arsenic acid, which, uniting with the alkali, forms a soluble arseniate. Nitrate of silver, applied as

* Rose says the free sulphur is always deposited along with the sulphurets precipitated from arsenical solutions by sulphuretted hydrogen. If this proposition be well founded, it will readily account for the obscurity and obstruction frequently experienced in the subliming of minute quantities of metallic arsenic in the operations under consideration. It will also account for the yellow, or yellowish red ring, which I have already noticed as occasionally surmounting the metallic crust obtained by the reduction of the sulphuret of arsenic by some of the preceding processes, and offers an additional reason for endeavouring to obtain a pure preparation of arsenic for reduction by the deflagration of the sulphuret. However, it may be observed, with respect to the assertion of Rose, "that the free sulphur is produced by the decomposition of the sulphuretted hydrogen which existed in the solution," that this decomposition is owing to the action of the acid, which he invariably uses for acidulating the arsenical solution, and which is the muriate, or hydrochloric acid. When the acetic acid is used for this purpose, there is never any separation of free sulphur, diluted acetic acid exerting no sensible chemical action upon sulphuretted hydrogen unless animal or vegetable matter be present; then free sulphur is deposited. If an acetic acidulous solution of arsenic, in distilled water, be precipitated by sulphuretted hydrogen, the whole of the precipitate is soluble in caustic alkali, or ammonia; nor will the slightest separation take place after weeks. But the case is different if animal or vegetable matter be present, or that the solution be acidulated with a mineral acid; then the alkali leaves behind a yellow residuum, which on being washed, collected, and dried, proves to be pure or free sulphur. Rose also states that the separation of the oxides, that is, the arsenious and arsenic acids, from each other, is attended with difficulties which are insurmountable. It may, however, be accomplished in the following manner: acidulate the solution, if alkaline, or if the acids be combined with bases, with acetic acid, apply nitrate of silver, which will precipitate arsenic acid only, because nitrate of silver does not singly decompose arsenious acid; the quantity of arsenic acid is then estimated by the weight of the arseniate of silver, and which may be proved by subliming the metallic arsenic, weighing it, and adding to this weight the equivalents of oxygen, the sum of which will give the quantity of arsenic acid. The arsenious acid may then be separated, and its quantity estimated by well known processes, which it is needless here to describe.

before recommended, precipitates arseniate of silver, which is to be reduced in the manner already explained.

"Such are the methods which, after much inquiry, I have been induced to prefer for the detection of arsenic and its compounds in medico-legal inquiries. The first objection is to obtain a solution of the arsenic, if possible. The next is to free this solution as much as possible from all volatile organized matter; because otherwise the resulting sulphuret is either retained in mechanical suspension, and therefore not separable without filtration, which should be avoided as far as possible, because in order to avoid loss, the whole filter, with its contents, must be deflagrated, and which renders the operation more intricate and troublesome: or which is of more importance as an objection is, that the sulphuret remains in solution in organic fluids, and therefore not precipitating, escapes analysis. When we can be certain that the arsenious acid is the form under which the poison has been administered, Dr. Christison's process is that by which the largest and purest proportion of sulphuret can be obtained. But under these circumstances the precipitated matters should not be lost sight of, for the arsenious acid is occasionally decomposed, and converted into sulphuret of arsenic, by sulphuretted hydrogen found in the stomach, an effect very likely to result from the instant action of the poison upon the coats of the viscus. Orfila also says that the arsenious acid is liable to be converted into arseniate of ammonia by the putrefactive decomposition of the animal textures, which sets in at long intervals after death. In such circumstances, Dr. Christison's process would throw down the arsenic, in the form of arseniate of silver, along with the animal matter, and it would thus escape analysis, unless the precipitate were examined. The destruction of the animal matter by nitric acid will not precipitate any of the soluble preparations of arsenic, and will dissolve many of those which are insoluble in simple distilled water. It also often peroxidates the arsenious, converting it into arsenic acid, a preparation far more soluble than the former. 'It is true,' Rose says, 'that the arsenious acid cannot be easily converted into the arsenic acid by means of nitric acid alone, but only by means of aqua regia.*' If, however, the operator is desirous of converting it with certainty into arsenic acid, it is easily done by the addition of liquid chlorine; or still better, by transmitting a current of chlorine gas for ten minutes, and boiling to expel the excess of chlorine. There is also the additional advantage of destroying the colour of the solution by means of chlorine. There is one thing, however, with respect to arsenic acid, of which the operator should be apprised, that arsenic acid, as has been correctly observed by Rose, is precipitated by sulphuretted hydrogen gas far more slowly than arsenious acid; consequently, the action must be kept up longer, and the hydro-sulphuretted solution should be heated, to expel any excess of sulphuretted hydrogen. 'Of all substances,' says Rose, 'that are acted on by sulphuretted hydrogen gas, arsenic acid is the one whose precipitation requires the greatest length of time. Besides this, a much *greater* quantity of the resulting sulphuret of arsenic *remains in solution* in the hydro-sulphuretted liquor than is the case when the arsenious acid is precipitated. The dissolved sulphuret can, nevertheless, be *fully* precipitated, by exposing the mixture to a very *gentle* heat till it ceases to smell of sulphuretted hydrogen.†' Hence, then, when the preparation is the arsenic acid or some of its soluble compounds, or that the operator has endeavoured to convert the mineral into arsenic acid, the solution should be heated to expel the excess of sulphuretted hydrogen, and sufficient time allowed for the separation and subsidence of the arsenical sulphuret. Even when arsenic acid is present, and which might be at once precipitated by the simple application of nitrate of silver, I prefer precipitating the sulphuret, because this, with the subsequent deflagration and reprecipitation, in the form of arseniate of silver, are so many distinct identifications of the poison, the ultimate reduction of which to the metallic state must remove every particle of doubt from even the most sceptical."

* Page 199. Griffin's Translation of Rose's Manual.

† Ibid, p. 202, 201.

33. *Is the Meat of Diseased Animals unwholesome?*—The following remarks on this subject, from the *Gazette Medicale*, for 20th of August last, though far from satisfying us of the innoxiousness of the meat of diseased animals, are nevertheless worthy of consideration. The subject is an interesting one, and should receive more attention than has hitherto been bestowed on it.

Among the investigations which the central council of health for the department du Nord has included in its report for 1830, to the prefect of Lille, there is a question which appears to us of very great interest, namely, whether the meat of kine attacked with tubercular affections proves injurious to the health of individuals eating it? The facts which led to this inquiry occurred recently at the Lille butchery; some of them are as follows:—In the middle of last January, a cow brought to market was suspected of being affected with the aforesaid disorder, and the police having been informed of it, summoned Messrs. Pommeret, a veterinary surgeon, and Simon Pers, a merchant butcher, both considered skilful in their avocations. After having examined the animal with great care, M. Pommeret declared it to be affected with the tuberculous disorder, which affection was limited to the lungs and pleuro costales, and appeared to have no connexion with other parts of the system: he was convinced that the animal in question, although slightly affected with tubercles, might be used as aliment, without producing any inconvenience to health.

Simon Pers the butcher, declared that the cow had its lungs and sides covered with small pimples, (*boutons*,) which constituted the disease called leprosy, on which account he thought its meat should not be exposed to sale, but buried, as not being fit aliment for man.

After this discordance in the opinions of two persons, both regarded as expert, the police called upon a third, who gave it as his opinion, that as the tuberculous affection was confined to the lungs and pleura, all other parts of the system appearing sound, the sale of the meat should be permitted, which was accordingly done.

A few days previous, a similar case occurred. A cow having been pronounced to be affected with leprosy and gangrene, was ordered to be buried. Messrs. Pommeret and Loiset, veterinary surgeons, repelled the charge of leprosy, none of the peculiar symptoms of which were found in the cow when examined, and which, besides, are only met with in swine. The designation of corrupted, (*pourri*,) which had been given to the animal, was considered by them as absurd and ridiculous, as they only recognised upon it a tuberculous affection, without any trace of other disease, and decided that the meat of the animal might be used as food without any inconvenience, and that permission to sell it should be given, which was accordingly granted.

These two facts go to prove, that at Lille, in the course of a few days, two cows, recognised as unquestionably labouring under the tuberculous disorder, have been used as nourishment by many hundreds of people, without causing any complaint. It is also well established, that this disorder is of more frequent occurrence than is generally supposed, especially in winter. It is fair to infer from this, that the meat of animals may be eaten without risk, whatever disease they may have when killed? The author of the report replies to this question by adducing the following facts:—

In all the large towns, and more particularly in Paris, dogs, and especially the valuable wild animals in the royal menagerie, are fed almost solely upon the flesh of horses.

Now, many of these horses are not only sick when slain, but are brought to the place after having already died of diseases; all are cut up alike, and made use of without giving rise to any inconvenience.

During the revolution, the professors of the school of Alfort, near Paris, caused a great number of horses, affected with farcie and glanders, to be taken into the forest of Vincennes, and there slain. The flesh of these was all eaten as fast as they came, by the inhabitants of the neighbouring villages, who, nevertheless remained free from any disease.

In the year 1737, the following fact was communicated to the Institute, by M. Hamel. A herd of cattle on its way from Limousin, stopped at an inn at Pitiviers, in Gatinois; one of the finest not being able to go further, was sold to a butcher, who killed it at the inn. The butcher's boy having placed his knife between his teeth, his tongue swelled, and he died five days afterwards, with a general gangrene. The innkeeper, who received a cut on one of his fingers, was attacked with a swelling on his arm, and died at the end of a week. His wife, who had received some of the blood upon the hand, had a tumour form on this part, and recovered with difficulty. Finally, a surgeon, who had opened one of the tumours, and placed his lancet between his wig and forehead, was attacked in this part with an erysipelas, which lasted a long time. Notwithstanding all this, says Hamel, all the meat of this animal was sold, and chiefly to the richest families; more than a hundred persons who eat of it, both roasted and boiled, found it excellent, and no one experienced the slightest inconvenience.

A dog, after having bitten seven cows, died a short time after with confirmed madness. Other dogs which he had bitten, were killed on showing indications of the same disease. The cows mentioned, soon exhibited symptoms of madness, notwithstanding which, they were butchered and distributed to customers, without either the milk, which had been drawn up to the time they were killed, or the meat having occasioned the least complaint from any of the inhabitants of Montargis, the village where this circumstance occurred.

In 1814, the allied troops carried in their march large flocks of cattle which they had pillaged. These having been over driven and badly attended to, were all seized with intense inflammation of the stomach, intestines, and liver. This disorder became contagious, and spread its ravages through the whole country, traversed by the army, especially at Paris and its environs. But the meat of none of the animals which died or laboured under this disorder, was suffered to be lost, all of it having been eaten by the strangers, citizens, soldiers, and lower classes: it was even consumed in the hospital. Nevertheless, there were no bad effects upon the health of individuals observed, and on the contrary, the typhus, which had preceded this epidemic, disappeared.

In 1815, the epidemic which occurred at the commencement of summer, continued till January, 1816. During six months of this epizootic, the allied troops received in their rations no other meat than that of animals that had laboured under typhus. On no table was any other meat eaten, but such as came from sick animals, and yet no persons were incommoded.

We have extracted from the report of the members of the central council, a case of each of the diseases most common among herbivorous animals: these having been reported by persons worthy of credit, we conclude with the authors of the memoir, that the reprobation attached to animals killed in a state of disease, and the repugnance universally manifested to eating their flesh from a persuasion of its being noxious to health, are altogether prejudices, which, for the interest of trade and the general welfare of man, should be done away. This is likewise the opinion of Messrs. Huzard, Darcet, Chaberet, Flandrin, Dupuy, and of a host of other savans, who have given particular attention to matters relating to public hygiene.

34. *On Poisoning with Acetic Acid.*—In the *Journal de Chimie Medicale*, for August last, there is an account of some interesting experiments by M. ORFILA, relative to poisoning by acetic acid. The following are M. Orfila's conclusions:—

1st. That the concentrated acetic acid is an active irritating poison, capable of speedily producing death in men and dogs when introduced into the stomach.

2d. That it occasions sanguineous exudation, afterwards softening and inflammation of the membranes of the intestinal canal, and sometimes even their perforation.

3d. That in most cases it produces a blackish colour, either general or partial

of the mucous membrane of the stomach and bowels. This discolouration is the result of the chemical action of the acid on the blood; in fact, by its mixture with this concentrated acid, the blood, cooled and placed in a capsule, soon acquires the same tint.

4th. Common vinegar, in the dose of from four to five ounces, induces the same symptoms, and death in dogs of the common size, in from twelve to fifteen hours, unless it is vomited soon after being swallowed; in rather a larger dose it probably produces the same effects in man. If in opposition to this it is said that persons have swallowed a tumbler of vinegar without a fatal result, this doubtless depended upon the stomach of such persons being filled with food, and vomiting soon occurred.

MEDICAL STATISTICS.

35. *Births in Prussia*.—During the four years, 1826, 7, 8, and 9, the number of births in Prussia was 2,011,288; being 40,081 births for every million of inhabitants. The greater number of births occurred in the least densely inhabited districts. Of the whole number of births 988,507 were single, 11,346 twins, one hundred and forty-four triplets, and three quadruplets.—*Memorial Encyclopedique, for August, 1831, from the Berlin State Gazette.*

36. *Statistics of Calculous Diseases*.—In our seventh volume, p. 499, we noticed some interesting remarks on this subject, by Mr. HUTCHINSON, showing the infrequency of calculous diseases among seafaring people. Dr. YELLOLY has pursued the investigation, and in an interesting paper in the *Philosophical Transactions*, for 1830, communicates much valuable information.

Dr. Y. states that in Ireland, calculus diseases are very rare. In various extensive districts, from which he has had returns, stone is entirely unknown; and in others it occurs with extreme infrequency. Thus in the counties of Antrim, Armagh, Londonderry, Donegal, Fermanagh, Tyrone, Carlow, Kildare, Kilkenny, and Longford; in King's county, and in the counties of Louth, Wicklow, Clare, Kerry, Galway, Roscommon, Tipperary, and Mayo, containing together, a population of above 3,500,000, not a single case of lithotomy has occurred in any of their respective hospitals since their establishment; nor has one example among the poor of these extensive districts, come within the cognizance of the practitioners who have furnished Dr. Y. with returns.

In the counties of Down, Monaghan, Leitrim, Sligo, Limerick, and Waterford, and in Queen's county, the population of which amounts together, to about 1,200,000 persons, nine cases of stone operation only have occurred during the whole time to which the records of the hospitals, or the information or inquiries of their medical officers extend, and which embrace a period little short of forty years. This is at the rate of not more than 0.25 per annum.

Dr. Yelloly's suspicion mentioned in a former paper that the principal occurrence of calculous diseases is in towns, is strengthened by his subsequent researches.

Soldiers appear to participate with sailors in their immunity from calculous disease. It appears from Sir James Macgregor's report on the diseases of the British army in the Peninsula, that between December, 1811, and June, 1814, of upwards of 330,000 cases admitted into general and regimental hospitals, no case of calculus presented itself. In the last fifteen cases only four cases of calculus have occurred in the English army in Britain, and only one case has occurred in the army in Ireland. In the two great French military hospitals Gros Caillou and Val-de-Grace, in thirty years, only six operations of lithotomy have been performed, five in the former, (four of which were soldiers and one a soldier's child,) and one in the latter. During six years that M. Gama has been chief surgeon of Val-de-Grace, and eight years previously that he exercised the same func-

tions in the military hospital at Strasbourg, he has not once had occasion to perform the operation of lithotomy.

The first memoir of Dr. Yelloly, with the valuable memoirs of Mr. Hutchinson, and Mr. Smith, on calculous diseases will be found in the *Select Medico-Chirurgical Transactions* recently published by Messrs. Carey and Hart.

CHEMISTRY.

37. *Preparation of Hydriodate of Potash.*—DR. WILLIAM GREGORY recommends the following process for the preparation of that salt. The iodine is to be dissolved with the aid of heat in a solution of pure potash. Enough potash must be added to form a solution having a pretty strong yellow colour, and if too much has been used so as to destroy the colour, iodine must be added till the colour is restored. The solution is then evaporated to dryness. The dry mass, consisting of iodate of potash and iodide of potassium, is now to be exposed to a gradually increasing heat, till it acquires a pretty full red heat, in a covered crucible of platinum or silver. The salt melts and the iodate of potash undergoes a decomposition exactly analogous to that which takes place in the chlorate of potash when exposed to a red heat. The whole of the oxygen, both of the acid and the potash, is expelled, and iodide of potassium remains; so that the whole of the iodine is now in the form of iodide of potassium, or hydriodate of potash. The heat must be continued at the same degree for about half an hour. When cold, the melted mass is softened out of the crucible with hot water, and dissolved in a moderate quantity of that liquid. If necessary, it is filtered, and the filtered solution is then evaporated to dryness by a gentle heat, when a snow-white crystalline salt is obtained. To ascertain whether the decomposition of the iodate has been complete, a small quantity of the salt is tested in a tube with alcohol, which ought to dissolve it entirely with the aid of heat. If any remains undissolved, and if the undissolved portion dissolves in water, and causes a white precipitate with acetate of lead, it is a proof that some undecomposed iodate is still present, and the salt must be again heated to redness until it stands the above test. A little practice renders it quite easy to know the proper degree of heat, and how long it should be continued.

The salt thus obtained is white and crystalline, deliquescent slightly in the air. It is easily soluble both in water and alcohol, especially if heat be applied. Its solution gives with a solution of corrosive sublimate a precipitate which at first is pink, but speedily changes to a bright scarlet. With acetate of lead it gives a bright yellow precipitate of iodide of lead, which is crystalline if the solution be slightly acid and very dilute.—*Ed. Med. and Surg. Journ.* Oct. 1831.

38. *Silix in Urinary Calculi.*—In a very interesting memoir in the *Transactions of the Royal Society*, for the year 1830, Dr. YELLOLY states, that in examining a dark brown calculus of oxalate of lime, of about five grains weight, he found some minute, colourless, transparent crystals, diffused irregularly in the substance of the dark oxalate, which, from their great hardness, and their insensibility to all the usual reagents he suspected to be siliceous. To determine this he instituted in conjunction with Mr. Faraday the following experiments. "A portion of the calculus being separated, which contained about nine of these granules, the oxalate of lime, and whatever other substance might be in combination with it, was destroyed by heat, and afterwards by muriatic acid. The granules were then left transparent and colourless; capable of scratching glass and agate, and unaffected by nitric or muriatic acids. These granules were then dried and exposed to heat, with a fused mixture of carbonate of soda and potash. They gradually dissolved, evolving carbonic acid; and a solution of the mass when cold, being made in water, and neutralized by muriatic acid, gelatinized silica was thrown down from it. A slight excess of muriatic acid was then added,

and the whole evaporated to dryness. After withdrawing the muriate of potash and soda by distilled water, the silica was left in its usual white insoluble state. By comparing the magnitude of these granules, with some which were taken from a sand bath, it was calculated that they did not average more than the four-hundredth part of a grain in weight. The granules were thus unequivocally proved to be of silex, and as they were imbedded in, and diffused through, oxalate of lime, a substance of known urinary origin, it is impossible to avoid the conclusion, that the production or deposition of these two substances, went on simultaneously." * * *

"There are only three instances on record so far as I know, of the existence of silex in urinary calculi. Two are mentioned by MM. Fourcroy and Vauquelin as occurring among six hundred calculi which they analyzed; and here the silex was found blended with oxalate of lime, as in the specimen which I have mentioned. The third was observed by Professor Würzer, and its principal ingredients were phosphate of lime and lithic acid, the weight of the calculus being eight hundred and seventy grains, and the quantity of silex being one per cent. In none of these calculi, however, is the magnitude of the siliceous particles stated."

Dr. Venables mentions the deposition of siliceous gravel in a paper in the Quarterly Journal of Science and Art, for Dec. 1829, and in a letter to Dr. Yelloly, he says, that in one instance after carefully filtering and putting aside for a fortnight, a portion of the urine from which some of the granules of silex had been derived, he found the inside of the glass studded in two or three places, with minute crystals of silex, strongly resembling those which were thrown down by the urine. The precise modes in which silex is capable of being held in solution in urine, is not ascertained.

MISCELLANEOUS.

39. *Violent Cholera at Clapham*.—About six o'clock on Thursday morning, the 13th of August, a son of Mr. Day, schoolmaster, at Clapham, aged about three years, having been previously in perfect health, was attacked with violent vomiting and purging; at twelve o'clock convulsions came on, and he continued in them until seven o'clock the following morning, when he expired.

The rest of Mr. Day's children, as well as his scholars, amounting in number to thirty boys, between four and fourteen years of age, remained all well the next day. This being Saturday, several of the scholars went home, to spend Sunday with their friends, leaving in the school twenty-two boys: of these, twenty were attacked, between three and nine o'clock on Sunday morning, with vomiting and purging of the most alarming character, attended with a degree of prostration which threatened many of them with immediate death. The appearance of the matters vomited was somewhat various in different individuals, depending probably upon the liquids previously taken. In some instances it was tinged with green bile, and was of a sub-acid smell, but in the great majority of cases it was colourless and inodorous. The stools also varied in appearance, but they were for the most part pale, consisting of mucous and muco-purulent matter, slightly streaked with scarlet blood.

The pulse varied also very much in different individuals: in the early stage of collapse it was very frequent, but so feeble as to be scarcely perceptible. When reaction took place, it had, of course, more force, but less frequency. The skin was in most instances cold and clammy throughout; in a few cases it was for a short time hot, and the face was, in these, occasionally flushed. There was a low delirium in some advanced cases, with dilated pupils; but the sensorium was not affected in the greater number of them. None of the little patients complained of pain in the stomach or bowels, beyond the griping which preceded the stools. There was, however, in a few of them, slight tenderness and some tension of the abdomen; and, as far as the exact course of the symptoms could

be ascertained in such a scene of confusion, it may be said generally that the disease seemed to come on very much like the tropical cholera, with a short obscure stage of excitement, which was immediately followed by a state of extreme collapse; and that this, under the use of stimulants, was succeeded, in those cases which were of the best aspect, by a stage of warmth, gentle moisture, and general reaction. We have mentioned that the disease was accompanied pretty generally with convulsive action of the muscles; but it may be of importance to remark that this, which amounted rather to a kind of twitch, or sub-sultus, than to cramp, was confined to the upper extremities.

Sunday afternoon.—Another of Mr. Day's sons is evidently sinking, and a third, as well as several of the pupils, are in a state of dangerous collapse; others, again, although not out of peril, are rallying from the attack. The first question that suggested itself to the minds of the medical men in consultation was, whether the symptoms were referable to any poison received into the stomach. The scrutiny, however, which was instituted with reference to this point led to nothing satisfactory at the moment. It was then determined to examine the body of the little boy who was the first victim of the disease. On laying open the abdomen, the viscera presented themselves in a remarkably healthy state, as far as external appearances went. The liver was of a perfectly healthy size and colour; the gall-bladder was somewhat distended with healthy bile; the peritoneum, throughout, pale, transparent, and perfectly free from any appearance of thickening. On laying open the small intestines, however, it was observed that the peyerian plexuses of mucous glands were enlarged in patches throughout the intestine ileum, raising internally, without destroying the mucous membrane covering them, into condylomatous elevations: lower down in the small intestines a few of the glandulæ solitariae were similarly affected, and in the ascending colon and transverse arch these latter glands seemed almost universally diseased, giving an appearance of pustulation, or rather tuberculation, to the whole interior of the bowel; the interstices of the tubercles here, as well as in the small intestine, being entirely free from vascularity. The mesenteric and mesocolic absorbent glands in the neighbourhood of the parts most diseased, were congested and enlarged. The stomach was quite healthy. The viscera of the thorax were likewise quite healthy. The contents of the cranium also, which were carefully examined, were entirely free from effusion, or other trace of disease.

The treatment which had been adopted, and which it was determined still to pursue, was, in the first place, to obey the great indication of preserving life by administering stimulants with opiates to those who were sinking from exhaustion and spasm. In the few instances in which the head seemed in the course of the reaction to be affected, it had been deemed right to relieve this symptom by the application of a few leeches to the temples. Besides these means, it was found necessary to apply mustard poultices to the abdomen, and to wash out the bowels with enemata, administering afterwards full doses of calomel and opium.

Early on Monday another of Mr. Day's sons, a boy of four years of age, sunk under the attack, twenty-three hours after its commencement. His body was carefully examined a few hours after his death, and exhibited the following appearances:—

The abdominal viscera, when first exposed, appeared, (as in the former case,) perfectly free from the traces of inflammation or other disease.

The examination of the bowels was commenced with that of the intestine ileum, in which the mucous glands, both aggregate and solitary, were found generally enlarged, and the mucous membrane covering them in many places ulcerated. The interior of the cæcum, colon, and rectum, however, exhibited no appearance of diseased mucous glands, although the membrane itself was throughout uniformly congested, pulpy, and very easy separable from the sub-jacent tissue.

The examination was now pursued upwards from the ileum: the jejunum at the lower part was less diseased than the ileum, and as it approached the duo-

denum was more and more healthy; the duodenum, however, on being laid open, exhibited a pustulated appearance, depending on enlarged follicles, very similar to that of the colon in the former case. The mesenteric and mesocolic glands belonging to the diseased portions of the bowel, were enlarged and more vascular than natural. The liver was also quite healthy; the gall-bladder contained more than an ounce of perfectly healthy bile. It was remarkable that the contents of the bowels were nearly colourless, and had no feculent, or indeed any other peculiar odour. The stomach was perfectly healthy. The viscera of the thorax were likewise quite free from disease. In the head, the ventricles of the brain were distended with about three ounces of serosity; and the sinuses were somewhat more changed than usual with dark-coloured blood. The brain and its appendages were not otherwise diseased.

Most of the boys were removed by their friends in the course of Monday; many of them in a very alarming condition, all however recovered.

The food and drink of the boys at the school at Clapham, as well as the contents of the stomach and bowels, were carefully examined by Dr. Burton, the chemical lecturer in the borough, and no poison or other cause of disorder was detected in them.

It is now ascertained that a very foul drain, or cesspool, the situation of which was not previously known, behind the house, was accidentally opened, in making some alterations about the grounds, a day or two before the disease occurred: the contents of this receptacle were taken out and thrown into a garden adjoining the play-ground, and separated from it only by a low and slight open paling. From this source it cannot be doubted arose the whole evil. Whether the sulphureted hydrogen itself was the agent in producing this pestilence, or whether that gas was merely the vehicle of some more subtle and abstruse miasma, it is not easy to say; but the boys were freely exposed to this effluvia, and almost every one of those who had been in the play-ground were attacked by the disease.

It is remarkable that the younger boys were most severely affected, and that a man who actually fell into the cesspool escaped altogether.

The appearances after death in the two cases which died, bore a striking resemblance to those delineated by Roideur and Wagler, as the results of the "morbus mucosus," which raged in Vienna between sixty and seventy years ago, and which probably owed its origin also to some analogous endemic effluvia. So far as the great intestine was concerned, the morbid change was very analogous to what takes place in the common fevers of this country.—*Lond. Med. Gaz. August, 1831.*

40. *On the supposed importation of the Cholera into Russia, by a Russian corps recently arrived from Turkey.*—In the review on cholera in the present number an account is given of the first appearance of that disease in Poland, and the opinion that it was introduced by the Russian army, in which the disease prevailed, is alluded to. Since that article was written, we have received a number of the *Journal Universel et Hebdomadaire*, containing an extract from the report made to the Royal Academy of Medicine by M. LONDE, the president of the medical commission sent to Warsaw by the French government. Dr. Londe says that the supposition that the cholera was communicated to the Polish troops by the Russian is contradicted by a document, which proves, 1st, that the cholera did not exist in the Russian corps engaged in the battle of Iganie; 2d, that not a single case of cholera appeared among the two thousand Russian prisoners made in the battle of Iganie, and who were completely isolated at Praga and watched for ten days; 3d, that more cases of cholera occurred among the Polish troops which had not been at Iganie, than among those which had been there. Dr. Londe also quotes other facts in opposition to its importation, and also many in favour of its spontaneous development. Thus, a French woman who had been confined to her bed for two months, and received but few visits died in twenty-four hours of cholera, without any of the persons who vi-

sited her being affected. A sister of charity, also, who had been bed-ridden for six months, went to the balcony of her chamber, which looked out upon the Vistula, was attacked with cholera, and died in four hours. Dr. L. also cites the case of a porter who died of cholera, whilst his wife and children, who slept in the same bed with him, were not affected.

41. *Atmospherical Changes during the Prevalence of the late Influenza in England.* By J. A. HINGESTON, Esq.—The late “influenza” was, perhaps, modified or occasioned by atmospherical changes, or, as Sydenham would have said, by “the constitution of the year.” If the following sketch of the state of the weather be worthy of your notice, it will find a place in the columns of your journal; for it may, in some degree, account for that excitement of the air-passages of the human body which has so lately prevailed, and been denominated “influenza;” and it may probably explain the cause of that mental and bodily debility which accompanied or followed that singular affection. It will be seen that the respiratory mucous membranes were first parched and afterwards moistened by the changes of the atmosphere, and that the whole body was first excited and then depressed by the same causes. Such circumstances will always controul and direct the conduct and practice of a thoughtful man.

During the month of May the weather was unusually variable; the barometer rising and falling suddenly, and the thermometer standing one day at 80 deg. Fah. and a few days afterwards at 32 degrees; the wind was prevailing steadily from the north-east. The month commenced with heavy clouds, murky storms, copious precipitations of rain, and remote thunder; the thermometer ranged from 55 to 60 degrees, and the wind blew for a few days from the west and then shifted round to the north. This condition of atmosphere was succeeded by an over-cast sky, with intervals of sunshine, a keen cutting wind from N. E., frost, ice, and snow; the thermometer rapidly sinking to 32 degrees. Great-coats which had been thrown off, were resumed, and the fire-hearth became acceptable. By the middle of the month the weather cleared and became warmer, the sky brightening; a high blustering wind prevailed from N. E., drifting before it clouds of dust from the roads, the thermometer ranging with celerity between 62 and 32 degrees. During the severest interval of this weather ice was formed upon the ponds at night, the early fruits were partially blighted, the petals of the new-blown rose dropped from the shrub, and the hedge-row box seemed, as it were, singed—“the frosty air-burnt froze.” The north-east wind was heightened into a gale, by which several vessels were drifted from their moorings in the pool of the Thames; and a heavy atmosphere, a calm, and a soaking rain, followed. From this time (20th) to the end of the month, either a gray mist, with a hot sun, 80 degrees, occasionally gave way before a gelid wind 40 degrees from N. East., the usual forerunner of storms and thunder, or the soil became dry and dusty under a slight sunshine with fleeting cloudlets, or a sultry sun gleamed through a hazy atmosphere. The thermometer stood at night 32 degrees, and in a day varied between 50 and 80 degrees. A pelting rain, N. 50 degrees, and a fine, clear, breezy day, W. 60 degrees, closed the month. Then followed the month of June, remarkable only for a high temperature, a singular humidity of air, a soft wind from the S. W., and a bright hot summer’s sun. During the first days of the month, the sunshine was interrupted by a light rain; once by clouds, rain, and a gale from north 40 degrees; and occasionally by transient hail-storms, and remote thunder. The thermometer ranged between 40 and 80 degrees, but it generally varied between, 75 and 60 degrees, and this was the month in which the influenza, so well described by Dr. Burne (see *Med. Gaz.* July 2d, 1831,) made its appearance.—*Lond. Med. Gaz.* Aug. 1831.

AMERICAN INTELLIGENCE.

Case of Chief Justice Marshall.—In our last number we stated that the operation of lithotomy had been performed upon the venerable Chief Justice of the United States by our esteemed collaborator, Professor PHYSICK, and that the patient was doing well. We have now the gratification of announcing the complete success of the operation, and of communicating the following particulars, with which we have been politely furnished, of the case.

Between two and three years since, Chief Justice Marshall, whose age at present is about seventy-six years, began to experience uneasiness in voiding his urine, which soon increased to severe pain whenever he discharged it. Walking quickly, or any sudden motion of his body, occasioned him much pain, and riding on horseback not only had the same effect, but caused his urine frequently to be tinged with blood.

On the 29th of September last he consulted Dr. P. respecting his complaint, and submitted to the necessary examinations. A bougie of full size passed easily into the bladder, which proved that no obstruction existed in the urethra. The state of the prostate gland was next examined in the usual way: this was found to be somewhat enlarged, and three hæmorrhoidal tumours were noticed—they were free from pain, nor had they for a considerable time caused any inconvenience. On the following day a common sound was introduced into the bladder; at first no stone could be felt, but by moving it in such a way as to cause its extremity to pass to the left side of the bladder, a calculus was found, and the noise from the stroke of the end of the sound against it was distinctly heard by those present at the time.

As the calculus had only been felt when the end of the sound was passed to the left side of the bladder, it was determined to vary the position of the patient's body, to ascertain whether the situation of the stone in the bladder could be changed in that way, but in every position it could only be felt when the end of the sound was passed to the left side of the bladder. These trials induced a belief that the stone had in some way a fixed position in the cavity of the bladder. On inquiry, it was found that he had never voided any fragments of a calculus, or any small stones until the day before his arrival in Philadelphia, when he noticed a small, smooth stone discharged with his urine of the size of a common pin's head. This was the only one he had ever voided with his urine, though that fluid was always discharged in a full stream.

The operation of lithotomy being determined on, was performed on the 13th day of October last, in the usual manner. After dividing the neck of the bladder with the gorget, a finger being introduced into the wound, the body of the prostate gland was found considerably enlarged, and the third lobe projected upwards, forming a tumour of the size of the end of one of the fingers.

The finger not being long enough to reach into the cavity of the bladder through these tumefied parts, it was impossible to feel the stone; a pair of forceps, moderately curved, were next introduced, on withdrawing which, the doctor was surprised to find that instead of a large stone he had only removed a number of small ones, which he at first supposed to be fragments of a large calculus, broken by the grasp of the forceps. On examining attentively the pieces removed, he found they were not fragments, but each of them was a separate stone, with a very smooth, polished surface, from which a small projection arose, and on some of them two or more of these projections, at the extremity of each of which a small depression or hole was noticed passing into the stone a little way. The operation was completed by extracting these

small calculi with forceps, and by injecting barley water to wash out any that might escape the forceps. It was estimated that more than one thousand of these small calculi were extracted. They varied much in size from that of a large pea to that of a pin's head, and being analyzed by Professor Itare, were found to be composed of uric acid. The Chief Justice bore the operation with uncommon fortitude and patience, not making any exclamation during the whole process.

The symptoms consequent to the operation were mild, and we had the pleasure to see his cure completed in less than five weeks, when he was able to return to Richmond, and to resume the duties of his exalted station on the bench. It is believed that each of these small stones was attached by a small fibril to the surface of a tumour growing out from the left side of the neck of the bladder, and entering the small depression noticed on the little projections above-mentioned. Had they been loose in the bladder, some of them must, we presume, have passed out with the stream of urine.

Structure of the Lungs.—We have been favoured by Professor HORNER, of the University of Pennsylvania, with the sight of a beautiful preparation made by him, showing the existence of a lateral communication between the cells of the lungs. The preparation was made in the following manner:—After filling the pulmonary arteries and the pulmonary veins with minute injection, the ramifications of the bronchia with the air-cells, were distended to their natural size by an injection of melted tallow. The latter being permitted to cool, the lung was then cut into slices and dried; the slices were subsequently immersed in spirits of turpentine and digested at a moderate temperature for several days; by this process all the tallow was removed, and the parts upon being dried presented the air-cells empty, and of their natural size and shape. Preparations when thus made show the air-cells as generally about a twelfth of a line in diameter, and of a spherical shape, the cells of each lobule communicating freely like the cells of fine sponge by lateral apertures. The lobules of the lungs however are found to communicate with each other only by branches of the bronchiæ, and not by the contiguous cells.

The opinions of anatomists are generally inclined to the insulation of each air vesicle excepting the little tube of the bronchia which runs into it, but these preparations go to show that the anatomists as Haller, Monro, Secundus, &c. who have believed in the direct communication of the air-cells, are on the right side of this question.

Sphincter Vesicæ.—It appears also from the dissections of Dr. HORNER that the sphincter muscle of the neck of the bladder surrounds the inferior two-thirds of the latter, being placed as described by Mr. Charles Bell under the mucous membrane of the part, but that the two ends of this muscle are inserted respectively into the posterior part of the lateral lobes of the prostate, whereas a plane of vertical fibres is at the superior third of the same orifice, immediately below the lining membrane, which plane arises from that part of the prostate above the urethra and spreads itself vertically for an inch or so on the adjoining part of the bladder. These arrangements are made evident by steeping a bladder for some time in spirits of wine, so as to condense its structure—then by removing its lining membrane at the part indicated, and raising up the muscular structure with the end of a scalpel handle instead of dissecting it.

On the Wax Myrtle. By WILLIAM M. FAHNESTOCK, M. D.—Since the publication of our paper on the medicinal properties of the *Myrica Pennsylvanica*, in the second volume of this Journal, we have frequently been called upon from many respectable sources for further information respecting the natural history, the distinguishing characteristics, the chemical properties, &c. of the plant. We now add a summary of all we know upon the subject in reply to those inquiries.

Myrtle wax is a concrete oil, obtained from the myrica. The shrub which

yields it abounds in many parts of the United States, particularly in Pennsylvania, New Jersey, Delaware, Virginia, the Carolinas, and Louisiana. It varies in height from three feet to the size of the common cherry tree, and bears a small berry, covered with a shining down of a gray-ash colour, from which the wax is prepared.

Pursh distinguishes four American species, viz.

Gale.—1. *M. foliis cuneato-lanceolatis apice serratis obtusis, amentis masculis imbricatis, squamis acuminatus ciliatis, fructibus squamoso-capitatis.*

In boggy grounds in Canada, and about the lakes and high mountains; plentifully on the Broad mountain, Pennsylvania. $\frac{1}{2}$ May, v. v. a low shrub, like all the following, of agreeable sweet scent.

Cerifera.—2. *M. foliis cuneato-lanceolatis apice rariter serratus acutis, amentis masculis laxis, squamis acutis, fructibus globosis minoribus.*

Pumila, *M. lineari-lanceolates.*

In shady, dry woods: Virginia to Carolina, $\frac{1}{2}$ In Carolina and Florida. $\frac{1}{2}$ May, June, v. v. a shrub, sometimes more than twenty feet high.

Carolinensis.—3. *M. foliis cuneato oblongis grosse dentatis amentis masculis laxis, squamis acutis, baccis globosis majoribus.*

In wet places about rivers and swamps: New England to Florida. $\frac{1}{2}$ May, v. v. not above three or four feet high.

Pennsylvanica.—4. *M. foliis oblongis untrinque acutiusculus integerrimis aut apice rarer sub-serratis margine, revolutis, amentis masculis laxis, squamis acutis, baccis globosis majusculus.*

In shady rocky situations: Pennsylvania and New Jersey. $\frac{1}{2}$ May, v. v. not above three feet high. It is generally confounded with the preceding, but is a very distinct species.

Toscan, in a memoir inserted in his work entitled *L'Ami de la Nature*, details the process of collecting the berries and preparing the wax, which may be summed up in a few words, namely; after the berries are gathered, they are boiled in water, which should be sufficient to cover the berries half a foot in the pot; skim the wax off which rises to the surface, which is then to be laid on a cloth to drain off the water with which it is mixed. It is then dried and melted a second time to render it pure; afterwards it is formed into cakes.

This substance is a concrete oil of moderate hardness and consistence; it has in part the tenacity of bees-wax, though without its unctuousity; along with this it also possesses in some degree the bitterness of the resins. The colour of the myrtle wax is a pale green; the shades of the different species are somewhat varied; in the most of them the green has a tendency to a dirty gray; in others it is lighter and more transparent. Its specific gravity is about 1.0150. It is fused at the temperature of 190° Fahr.; by sufficiently increasing the heat it burns with a peculiar, clear and white flame, producing little smoke, and during the combustion emits an agreeable aromatic odour. According to Dana's analysis the berries contained wax, 32.00; resino-extractive, 5.50; black powder, 15.00; kernels, 47.00; loss, 0.50.

Bostock, in his analysis of the wax, found—1st. That water has no action upon it, either when cold or at the boiling point. 2d. Alcohol, when boiling, dissolves it sparingly, and it precipitates again on cooling. 3d. Sulphuric ether, at the common temperature of the atmosphere, dissolves it only in small quantities, but acts upon it rapidly when boiling, the greater part of which separates as it cools. 4th. Rectified spirits of turpentine, at the temperature of the atmosphere softens the wax; assisted by heat, one hundred grains of the spirit dissolves six grains of the wax, part of which separates as the fluid cools. 5th. When boiled with liquid potassæ the fluid becomes turbid, and the wax rises to the surface nearly without colour, in a flocculent form. In this saponaceous state it has lost its inflammability and fusibility, and forms an opaque solution with water. 6th. Pure ammonia exhibits with it phenomena in many respects similar to those produced by the fixed alkalies, though in a less degree than that resulting from the action of the potash. 7th. The mineral acids have but

little effect upon it: the sulphuric, when assisted by heat, converts it into a dark brown mass; the nitric changes the colour from green to a pale yellow; and by long digestion in muriatic acid, it becomes a bright orange. From these results, obtained in an extended course of experiment, which may be found in *Nicholson's Journal*, vol. 4, Dr. Bostock considers the myrtle wax a fixed vegetable oil, rendered concrete by the addition of a quantity of oxygen. It seems to hold the same relation to the fixed, that resins do to the essential oils of vegetables.

The plant is easily cultivated, and independent of its medicinal virtues is very ornamental. Much expense and labour has been incurred to transfer it into the gardens of Europe. Thieboult, of the academy of Berlin, states that the late Mr. Sultzer, author of the Dictionary of Fine Arts, obtained from Frederick the Great, a portion of waste grounds of considerable extent on the banks of the Spree, in a place called the Moabites, which he converted into a garden. Among the other remarkable things he made a plantation of foreign trees, in successive rows, in form of an amphitheatre. In the southern row the wax tree was placed. All the visitors, we are informed, took particular notice of this shrub in preference to all others, on account of the delicious odour of its leaves, which they preserve a very long time.

We are inclined to attribute all its therapeutic properties to the colouring matter or pellicle surrounding the kernel, and which imparts the colour to the wax; from the circumstance that the wax most deeply tinged with this substance is the most efficient, and from the fact that the liquor in which it has been boiled, when evaporated to the consistence of an extract, has been most successfully employed, according to M. Alexandre, in the most obstinate dysenteries. What may this astringent colouring principle be, Cadet* inquires, which is only soluble in alcohol, which is not precipitated by water, and has so little attraction for alumine? To discover it, it is necessary to make a course of experiments which the small quantity of substance we were in possession of would not permit us to undertake.

We have not used any of the article, from the circumstance of the great difficulty of procuring good, since our former communication, but we would urge a further investigation upon those gentlemen of the profession in the immediate vicinity where it grows. The advantageous properties that this tree appears to possess, says M. Cadet, ought to have induced philosophers to make inquiries to ascertain the various properties of the vegetable, and what attention its culture might require; it has long been considered merely as an object of curiosity.

Contributions to the Pathology of Traumatic Tetanus. By W. W. VALK, M. D. —It is becoming more and more obvious, that great improvements have taken place within the last few years, with regard to every department of medicine, and not the least among these, have we been conspicuously enlightened on obscure pathological subjects.

In the course of our professional duty, we are called upon to witness many humiliating and painful circumstances, to find our best efforts fruitless, and too often all the good that we can do, is confined to the discoveries we make of the seat of disease, and consequent cause of death.

Whilst a student in the office of Professor Prioleau, of the Medical College of South Carolina, we first witnessed the form of this dreadful malady, succeeding in two instances to very trifling injuries. Since that period, (1825,) four instances have come under our notice, three of them in our own practice, *all* in coloured persons, and all but one fatal. In two of the number, it succeeded to a puncture in the sole of the foot, in one to an abrasion of the cuticle on the instep, in one to a detachment of a piece of the internal maleolus, and in two to a puncture in the hand and wrist. We lost two of our cases—they were both actively treated, but our efforts were vain; in the case of recovery, the means

* *Annal. de Chémie*, t. 43.

made use of were active cathartics, (turpentine and oil,) and blisters to the spine. Permission being obtained to examine the bodies, we give the results, with one qualification, and that is, engorgement of the vessels of the brain and spinal cord, may take place from the effects of gravitation after death.

Mary Hinson, æt. 14, died on the fifth day from the accession of tetanic symptoms; her body was examined nine hours after death. With some difficulty, the vertebral canal was laid open from the cervix to the sacrum. To judge from *appearances*, active inflammation had existed upon its investing membrane, the vessels of the pia mater being *very conspicuous, numerous, and greatly distended*. Nothing remarkable in the aspect of the tunica arachnoidea, or the medulla.

On tearing up the skull-cap, much blood escaped from the laceration of the vessels of the dura mater; the brain being exposed, presented no unusual appearance, nothing indicative of congestion, or any extravasation.

Thorax.—Both lungs very firm, from the accumulation of blood. Heart healthy.

Abdomen.—Viscera natural, considerable accumulation of feces, (semi-fluid,) offensive, dark-coloured, and having a peculiar *black sediment*, which we had never observed before, resembling pulverized charcoal. On mixing a small quantity of it with water, it would appear to be soluble: by rest, however, it would subside, and remain in the bottom of the vessel, leaving the water transparent.

The disease in this instance was naturally referred by us to the wound in the foot, the patient having stepped on a nail, which penetrated to the depth of an inch and a quarter. At the time of death it had progressed favourably towards cicatrization.

CASE II.—Rebecca Peterson, æt. 47, died on the third day of the disease; examined twelve hours after death.

Spinal cord healthy, vessels of pia mater *much congested*, serous effusion between it and the tunica arachnoidea, no other part examined.

The production of tetanus in this case was attributable to a puncture in the hand by a fork, on the 24th of May—death on the 31st.

In the first, the wound was inflicted on the 16th of June, tetanus on the 19th, death on the 24th. Surrounded by an abundance of filth, and living in comparative obscurity, these individuals presented a revolting picture to humanity, and were scarcely noticed by any of their colour, though living under the same roof. No compensation could be expected, and we were informed that medical advice had been solicited and refused on *that* account.

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On the state of the Dew point as connected with the prevailing Influenza. By JAMES P. ESPEY, of Philadelphia. [Communicated in a letter to Dr. HAYS.]—On the 28th of November, 1831, there was a sudden and uncommon depression of the “Dew point,” from 42° Fahrenheit to 21°, and on the 29th it was down to 19°.

Its mean temperature since that time has been 14°, and on the 17th and 18th of December, it was below zero. The mean temperature of the air for this period has been 25°.

A thought has occurred to me, that the epidemic influenza, which has prevailed during this period, may have taken its rise from the extreme *dryness* of the air, rather than from its *coldness*.

I leave it however to the medical profession to determine, whether the immense quantity of vapour, which is exhaled from the lungs when the “dew point” is low, more than when it is high, produces any change in physiological action, and if it does, what that change is. I confine myself to facts and principles, founded on the most unexceptionable experiments, from which it will appear that during the last twenty-eight days, a man of ordinary size has exhaled from his lungs every day about 839 grains more than he did each day on the preceding month, when the dew point at a mean was 36°.

It is known, from the experiments of Gay Lussac and Dalton, and others, what quantity of vapour is contained in a cubic inch of air of any given "dew point." According to their experiments, a cubic inch of space, whether that space contains air or not, if the temperature of its "dew point" is 14° Fah. contains .00073810 grains of vapour, and a cubic inch of air or space, whose "dew point" is 36° , contains .00156156 grains of vapour. And a cubic inch of air, or space without air, whose "dew point" is 94° , contains .00938243 grains of aqueous vapour.*

This last temperature, 94° , I have found to be the "dew point" of air expired from the lungs, whatever may be the temperature of the "dew point" of the air previous to inspiration. This you may easily try by breathing on a tumbler of water of that temperature. Consequently, the quantity of vapour expired is, at all seasons, .00938243 grains, for every cubic inch inspired. Now, if we subtract from this the quantity which the air contained for each cubic inch inspired, the remainder will be the quantity for each cubic inch evaporated from the lungs; and if this quantity be multiplied by the number of cubic inches of air inspired in a day, the product will be the number of grains of aqueous vapour evaporated from the lungs in a day.

For example, if a cubic inch of air is inspired when the "dew point" is 14° , which contains as above, .00073810 grains of vapour, when it is expired, it will contain .00938243. Subtract the former quantity from the latter, and the remainder, .00864433 grains, is the quantity of vapour exhaled from the lungs above that which is inhaled. Multiply this by 1152000, the number of cubic inches inhaled in a day, (according to Jurine, Minzius, Thompson, and Gordon,) the product, 9868 $\frac{1}{2}$, or 1 2.5 pounds avoirdupois, will be the quantity actually evaporated from the lungs in a day when the "dew point" of the atmosphere is 14° .

By making a similar calculation, it will be found that when the "dew point" of the atmosphere is 36° , the actual quantity of aqueous vapour evaporated from the lungs in a day, above what is inhaled, is 9009 4-10 grains, which is, as mentioned above, 859 grains less per day than in the former case, almost 2 oz. avoirdupois.

From the principles here stated, it will readily appear that the quantity of water evaporated from the lungs in summer, when the mean "dew point" is near 70° , is still less.

For example, the quantity of vapour in a cubic inch of air, whose "dew point" is 70° , is .00461639; this subtracted from .00938243, the quantity always contained in a cubic inch of air, the moment it is expired, leaves .00476604; and this multiplied by 1152000, as before, gives 5490 $\frac{1}{2}$ grains of water, evaporated from the lungs in a day, when the "dew point" of the air inhaled is 70° , which is about 5.9 of the quantity which has been evaporated from the lungs per day for the last twenty-eight days. I am aware that the true principles of inductive science require many coincidences between a sudden variation of the "dew point," and any epidemic to justify us in drawing the conclusion, that such variation is the cause of the disease—and I would not have troubled you with this communication if it had nothing to recommend it, but the suggestion, that the sudden depression of the dew point might be the cause of the existing epidemic.

Philadelphia, Dec. 27th, 1831.

Influenza.—The influenza from which we are at present suffering in this country, prevailed in China during January, 1830, and in Manilla in September of the same year. It preceded the cholera both in Russia and Poland, but we do not know the exact period at which it appeared in those countries; it prevailed in France during May and June last, in England during June and July, and about November began to prevail in this country. Mr. Lawson, surgeon of H. C. ship *Inglis*, states that in China the symptoms of the disease were, "pain in the head, more es-

* See Edinburgh Encyclopædia, article Hygrometry.

pecially over the frontal sinus, cough, discharge from the nose, sense of rawness in the throat and chest, rather than severe pain, great prostration of strength; in some of the cases there was pain in the epigastrium, as well as across the loins: with severe aching pains in the limbs, pulse frequent, but generally soft. The febrile symptoms, in most cases, had entirely subsided on the third or fourth day, and the cough, in the majority of instances, in about the space of a week from the commencement. There were however some exceptions, where a troublesome cough remained for two or three weeks."*

Mr. George Bennett gives the following description of the disease as it occurred at Manilla. The commencement of an attack from this disease was with a general lassitude, followed by pains referable to the lumbar region, and in some cases with muscular pains over the whole body; an increased secretion of mucus in the nose, as also in the fauces and bronchiæ; intense headache, principally referable to the frontal sinuses; tongue white; eyes suffused with tears; skin hot; much thirst; a rawness of the throat; cough, particularly troublesome at night; in some cases a restriction across the chest was much felt; appetite impaired; bowels generally costive; quick pulse; and in those of very plethoric constitutions, (in whom the attacks are severer,) a very quick full pulse; flushed countenance. The symptoms varied in intensity in different persons; some having the fever and concomitants so high, with a flushed countenance, and a pulse so full, strong, and quick, as to have almost induced me to resort to venesection; other cases again assumed a very mild character, but in a very slight degree incapacitating the patient from pursuing his occupations. The patients were worse during the night than during the day, the accession of the fever and cough being much greater at that period. After the patients had in some degree recovered, a troublesome cough, attended in most cases with much expectoration, remained, and in delicate constitutions may be apt to lay the foundation of pulmonary disease.

In Paris the disease is described as commencing with coryza, head-ache, lachrymation and sneezing; dryness, pain and tickling of the throat: difficulty of swallowing and cough, sometimes dry and at others accompanied with expectoration of clear, or thick mucus. To this first series of symptoms a more or less marked derangement of the stomach and bowels was added. There was loss of appetite, and sometimes nausea and vomiting, but when vomiting occurred it was generally after violent fits of coughing. There was also lassitude and feeling of soreness in the limbs and more or less depression of spirits. There was often no fever; when it did exist, it was commonly continued, moderately intense and terminated with abundant sweats. In some plethoric persons the cerebral symptoms and those of pulmonary congestion were very intense. In one case delirium continued for four days, and in another the head-ache was extremely violent, and yielded only to the repeated application of ice. In a few cases there were abundant and obstinate hæmoptysis. Previously to the appearance of this epidemic in Paris catarrhs had become frequent; as the hot weather came on, the catarrhal state of the respiratory apparatus almost entirely disappeared, but vomiting and diarrhœa which had been observed in a few of the patients who were affected with the influenza, became more frequent and violent; in many persons there was no vomiting, but only dysenteric symptoms, in others a simple bilious flux. Finally, during the month of August, spasms of the limbs and body were joined in some patients to the symptoms just described, constituting sporadic cholera.†

In England the epidemic is stated to have commenced like a common cold, but the constitutional disturbance was much more considerable than the catarrhal symptoms seemed to account for. "Running at the nose and eyes," says the editor of the *London Medical Gazette*, "with racking pain over the brows, are the most frequent local affections; which, however, are of-

* *Medical Gazette*, Vol. VIII. p. 825. † *Gazette Medicale*, June, 25th, 1831, and Sept. 10th, 1831.
No. XVIII.—Feb. 1832.

ten accompanied or succeeded by cough, and sometimes by nausea and an irritable state of the bowels. The feelings of languor, oppression, and discomfort, are always considerable, and sometimes very distressing; being occasionally attended with anxiety at the chest and tendency to faint. Some have severe muscular pains, of a rheumatic character, with tenderness of the integuments. The attacks generally last from two days to a week, passing off with perspiration, and, in the worst cases leaving the patients considerably reduced."* Dr. Burne says that the head is heavy and painful, and is jarred distressingly by the paroxysms of coughing, which gives the sensation as if the head was splitting.

In this city the disease has usually come on with catarrhal symptoms, generally attended with intense head-ache and gastric derangement. Delirium has been by no means an uncommon attendant on the disease, and in some cases the prominent affection has been that of the head, and even occasionally it has been a fatal one. Great depression of spirits has been occasionally present. When the catarrhal symptoms have predominated, there has often been much pain in the side, with rheumatism of the intercostal muscles and sometimes of the loins and limbs. The cough has been usually dry at the commencement, and sometimes occurring in paroxysms; the efforts to cough cause great racking of the brain.

We have seen the disease commence with vomiting and purging, like cholera, followed by a catarrhal affection of the respiratory mucous membrane, and rheumatic pains in the chest and limbs. The tongue has been in almost all cases exceedingly loaded, but there has been little or no tenderness of the abdomen on pressure.

In the treatment, venesection has been nearly always demanded, and sometimes it has been necessary to repeat it two or three times. After general bleeding, local depletion by cups along the dorsal and lumbar vertebræ, have been exceedingly useful in relieving oppression of the chest, when it was present, or the rheumatic affection of the limbs. Cups to the back of the neck and to the head, relieved the cerebral symptoms. Gum water, rice water, lemonade, and the like, for sole diet, and mild laxatives have, for the most part, completed the cure.

Treated upon these general principles, patients have nearly always speedily convalesced, and their recovery has been complete. Where, on the contrary, active depletion has been neglected at the commencement, the case has frequently terminated fatally; or engorgements of some of the viscera, particularly of the lungs, have taken place, and the foundation has been laid for incurable pulmonary disease. Our space does not permit us to enter into any further details respecting this complaint at present, but we shall probably hereafter recur to it. We should be pleased to receive from our correspondents accounts of the disease, as it has appeared in different parts of the country, so as to show the various phases it has no doubt exhibited.

Cerebro-spinal Axis of Man, with the origin and first Division of the Nerves.—Our readers are already acquainted with the beautiful map of the great sympathetic nerve, drawn by Mr. Ancona. The same gentleman now offers to the profession a companion to it, in a map of the nerves going off from the base of the brain, and from the spinal column. It is copied from a drawing made by Dr. Manee, with a translation of the references by Dr. Pancoast. The whole is exceedingly well executed, and worthy of the patronage of the profession.

We hope the same enterprising gentleman will present us next with a magnified drawing of the fifth pair of nerves and its branches.

We are compelled, from want of room, to omit notices of various new and of several proposed publications.

* Medical Gazette, July, 1831.

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PRECIPITATED EXTRACT OF BARK,

Containing Quinine, Cinchonine, and the new organic alkali Chiniodine, and possessing all the febrifuge properties of Quinine at one-third the price.

As the Sulphate of Quinine has become scarce, and increasing in price, it is an object of the highest importance to the community to obtain a preparation of equal efficacy, at a reduced expense. The above extract, we are pleased to find, will effect this object in the strictest application, and being the product of the same cinchona, and containing in addition to the Quinine, other alkalies of the same bark, of equal, if not superior efficacy to the Quinine—it unquestionably will meet the approbation of the faculty, and will no doubt be fully tested by the experience of our most distinguished physicians. It has frequently been asserted by chemists and scientific authors on cinchona, that there no doubt existed other active alkaline principles or extractive matters, in addition to those already discovered in the bark; and the conclusive facts in relation to the use of Quinine, the use of bark, and that of the residuary extract, corroborate the truth of this assertion. It is well known that numerous cases of intermittents have yielded to the use of bark in substance, which have resisted Quinine, even when long continued, and in large and repeated doses, to the extent of six or eight grains. And we have the evidence of the late Dr. Emlen, who was the first to use the residuary extract of bark after the Quinine was separated, and who asserts he discovered the happiest effects in its exhibition, in doses of two grains, and that it was in no respect inferior to the Sulphate of Quinine; and Drs. Parrish and Wood, distinguished members of the profession in this city, found the result of their practice with this extract fully successful.—(See Journal of the Philadelphia College of Pharmacy, vol. I. 44.)

Dr. Serturmer, chemist of Hamelin, likewise ascertained what has been observed by other practitioners, that Quinine cannot be substituted for cinchona as a tonic. He made analytical researches on the bark to discover the cause of the difference.

The precipitate obtained by treating the acidulous extract of cinchona by alkalies, comprise, beside Quinine and Cinchonine, certain additional organic alkalies.

These new organic alkalies, especially the principal one, which Dr. S. calls *Chiniodine*, are intimately united with subacid resinous substance.

The new alkali exists in the cinchona barks, associated with Quinine and Cinchonine, and are all precipitated together in the above extract. The *Chiniodine* resembles the other alkalies of Cinchona, in its solubility, colour, and taste; but it is distinguished from them by its activity, and its greater capacity of

CARPENTER'S CHEMICAL WAREHOUSE.

saturation, and its alkaline reaction, and its intimate combination with an extractive matter. Dr. Serturner further states, that as a medicine, Chiniodine is one of the most precious agents of the *materia medica*. It is not only a better febrifuge than Quinine and even than the bark in substance, but it possesses many other therapeutic properties which, admitting that they exist in the bark itself, are not to be found in Quinine. It was prescribed by Dr. S. in the dose of two grains, three times a day. In all the cases treated by the new remedy, the fever was cut short without relapse, and in every instance the concomitant symptoms, such as paleness of the face, loss of appetite, oedema of the legs, &c. disappeared in a shorter time than is usually the case. The medicine failed only in a single instance. The quantity necessary for a cure was generally from 12 to 24 grains.—(See *Journal des Progrès*, vol. 3, for 1829.)

The above extract can be conveniently made into Pills with Liquorice Powder or Starch, and it can be made into a solution with water by the addition of one drop of Sulphuric Acid to each grain of the extract.

The following formula is an eligible mode of exhibition which produces a beautiful transparent solution.

R.	Precipitated Extract of Bark,	-	-	-	48 grains,
	Acid Sulphuric,	-	-	-	40 drops,
	Alcohol,	-	-	-	2 drachms,
	Aqua Cinnamon,	-	-	-	4 ounces.

M.

Drop the Sulphuric Acid in the Alcohol and about two drachms of water which should be used to triturate and dissolve the Extract, after which the remaining water should be gradually added. If Alcohol is inconvenient it can be made without it.

The above extract will always be sold at about one-third the price of Quinine; and as it is of equal if not superior efficacy to the latter it will no doubt be extensively used, and can always be had at

GEORGE W. CARPENTER'S

Chemical Warehouse, No. 301, Market street, Philadelphia.

CARPENTER'S

OLEO-RESINOUS EXTRACT OF MUSTARD,
OR OIL OF SINAPINE.

The seeds of the *sinapis nigra* are admitted to be one of the most useful and extensively used rubefacients we possess. The mode of using this article as a rubefacient is to make a paste with the farina of the seeds and vinegar, which is to be applied in the form of a poultice. This is frequently attended with difficulties and considerable inconveniences, and mustard differs so essentially in quality, that little dependence can be placed upon its certainty of effect. It is almost always more or less adulterated, and the flour which is sold from the stores is frequently more than half composed of foreign and inert matter. At the suggestion of our distinguished Professor, Dr. Physick, I have made a series of experiments on the mustard, with a view of ascertaining the active constituent principle, and separating it in a form best adapted for its application as a rubefacient, and I am pleased to find that my experiments have resulted favourably, and that I have obtained the active principle of the mustard which is combined with a volatile acid oil, a full description of which will be given in the second edition of my *Essays on the Materia Medica*. This peculiar principle I have denominated Sinapine, in conformity to the usual nomenclature of vege-

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table proximate principles. It bears the same relation to Mustard that piperine does to pepper, and like it is united with an acrid oil, and is otherwise analogous to piperine in its chemical properties, in not forming salts with acids, &c. &c. This principle differs essentially from the volatile oil obtained by distillation, being much more active and in every respect a far superior article, and will entirely answer all the purposes of the mustard plaster as a rubefacient; it is simply to be applied to the skin, and in a few hours all the effects of the mustard plaster will be experienced, and vesication may be produced by a second application of the oil. To the country practitioner the advantages of this oil are almost incalculable. It is extremely inconvenient for the country practitioner to carry the mustard with him, as its virtues are deteriorated, and in a short time rendered inert, if not kept in a close bottle, so that they seldom if ever carry the article with them, and they are thus frequently deprived of the usefulness of sinapisms so important in some cases as to be essential to the life of the patient. This oil is so concentrated a preparation that a small vial will be sufficient for several applications, and which can be conveniently carried with the medicines usually taken by the physician. Its action will always be uniform, and not subject to deteriorate in any length of time. It will certainly be a valuable substitute for the crude mustard as a rubefacient, and I hope will prove a valuable addition to the *Materia Medica*.

It is manufactured and for sale only at

GEORGE W. CARPENTER'S Chemical Warehouse,
301 Market street, Philadelphia.

CARPENTER'S SARATOGA POWDERS,

FOR MAKING

CONGRESS SPRING OR SARATOGA WATERS,

Equal to those fresh from the Springs.

These powders are much superior to the Seidlitz, being equally aperient and more agreeable, and at the same time possessing valuable tonic and chalybeate qualities.

It is now scarcely two years since the introduction of these powders, in which time they have been sent to every populated section of the United States, and have given in all places the highest degree of satisfaction; they are now extensively used throughout the southern states, where they are highly appreciated by the faculty, and extensively employed by the most distinguished physicians. They have elicited from the professors of several medical institutions and from highly distinguished individuals in various places, voluntary acknowledgments of high commendation on their valuable properties. The reputation and demand which Carpenter's Saratoga powders have acquired will no doubt be an inducement for the ignorant to attempt their preparation. The proprietor has already received frequent complaints that spurious and inferior imitations have been made, and that sales have been effected on the reputation and character of his preparation. He deems it justice to the community to apprise them of these facts, that they may be on their guard. They should be particular to specify in their orders, *Carpenter's Saratoga powders*, otherwise they may get another article; and the same remarks will apply to the Extract of Sarsaparilla, Compound Tonic Extract, and several other preparations.

We are pleased to find that the imitation powders are not patronized by the faculty, but are objected to wherever they are known. In some cases, however, they are purchased by individuals who are not acquainted with the circumstances,

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and do not discover the fact, until they begin to make use of them. The proprietor has received numerous letters on the subject of this grievance, and a number of expressions of dissatisfaction have appeared in various journals and gazettes of the southern states. The following is from the Southern Times and State Gazette of July 11th, 1831, published at Columbia, South Carolina.

"I copy with pleasure the editorial article from the National Gazette of Philadelphia, because I can honestly say, the compliment is deserved. There are some very inferior imitations of Carpenter's Saratoga Powders, which are by no means worthy of public notice compared to Carpenter's. As a summer aperient equally pleasant and efficacious as the Water, they can be relied upon."

The following is extracted from the Knoxville Register, of Sept. 7, 1831, from the pen of a distinguished physician of extensive practice in Knoxville, Tennessee.

"*Carpenter's Saratoga Powders.*—Among the many inventions of the age we live in, few are more interesting to the valetudinarian than the successful imitation of our most celebrated mineral waters. I saw a few days since, in the National Gazette, a notice of the extensive use in the city of Philadelphia of *Carpenter's Saratoga Powders*. I have myself been in the habit of using them and prescribing them for the last two years, and can truly say, that they are not only a very safe and useful medicine, but what can be said of few medicines they are very pleasant and refreshing. They are probably the most successful imitation of mineral water that has ever been made; and it is now in the power of the invalid to furnish himself with the means of making a glass of Saratoga at home, or in short journeys undertaken for health. I have no doubt that these powders would add very much to the value of our chalybeate and sulphur springs, by being dissolved in their waters," &c. &c.

 CARPENTER'S

COMPOUND FLUID EXTRACT OF SARSAPARILLA.

The extensive use of Sarsaparilla in medical practice for some years past, and the trouble and difficulty which patients are subjected to, in making the decoction and syrup, has rendered it an object of importance to procure a preparation of it in a more convenient form than those usually prescribed. Sarsaparilla requires considerable boiling to take up the extractive matter, and in consequence is most frequently improperly made by those unacquainted with pharmaceutical preparations. Numerous preparations of Sarsaparilla and various modes of preparing them have been given, all of which, of course, will differ according to the mode of preparation which each individual may adopt. It is, therefore, of the highest consideration and importance to the faculty that there should be a standard preparation of uniform strength and possessing the most advantages. To effect this and obviate the inconveniences alluded to, I have made a number of experiments to ascertain the most effectual means of extracting the virtues of Sarsaparilla, and to discover the most eligible form for its exhibition. The experiments have resulted most favourably, and it is with much pleasure I now offer to the faculty my Compound Extract of Sarsaparilla, which contains all the virtues of the medicine and is the most active preparation of Sarsaparilla which can be made. One table spoonful of this Extract added to a pint of water is equal to a pint of the Lisbon diet drink, and one bottle of the fluid Extract is fully equal to a gallon of the syrup of Sarsaparilla or the decoction as usually made.

The decoction is exceedingly troublesome, as it is necessary to prepare it fresh every day; and the syrup is still more objectionable, as it is weaker than the decoction, for a fluid saturated with sugar is susceptible of holding in solution much less extractive matter than water alone, and the syrup is otherwise objectionable in consequence of the large proportion of saccharine matter which

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it contains; for the patient is frequently nauseated and his stomach surfeited by the large proportion of sugar he is obliged to take with each dose of the Sarsaparilla, and which is of no use whatever, except to keep the decoction from spoiling. Here the advantages and superiority of the fluid Extract in a comparative view are strikingly manifest.

An interesting paper is published in the *Medico-Chirurgical Review* for July, 1830, on the subject of the extract of Sarsaparilla in venereal affections, by Benjamin Travers, F. R. S. &c. &c. Speaking of Syphilis and diseases arising from the excess of mercury, he states, "that no remedy, next to the adjustment of diet, is equal to the extract of sarsaparilla; its power is extraordinary, more so than any other drug I am acquainted with. It is, in the strictest sense, a tonic, with this invaluable attribute, that it is applicable to a state of the system so sunken, and yet so irritable, as renders other substances of the tonic class unavailing or injurious."

"We take the liberty of marking in italics," says the distinguished editor, Dr. Johnson, "the passage respecting Sarsaparilla, because we most cordially concur with Mr. Travers in the statement which it contains in favour of the extract of Sarsaparilla."

Since the introduction of the fluid Extract of Sarsaparilla, its reputation has been constantly increasing, and its popularity has extended in all directions. It is highly approved of by the faculty, wherever it has been introduced. It has already been sent to almost every populated section of the United States, and whether in town or country, hospital or private practice, it has invariably given to patient and practitioner the most decided and unequivocal satisfaction, and produced the most salutary and beneficial effects. Numerous letters have been received from some of the most distinguished physicians in the country, and from the Professors of several Medical Colleges, all recommending in the highest terms, the value of this medicine, and its superiority over other preparations of Sarsaparilla. Several cases of secondary syphilis, mercurial, and scrofulous diseases have entirely recovered in the incurable wards of our public institutions, which had for many years resisted every mode of treatment which could be devised. These cases furnish striking examples of the salutary effects of this medicine in arresting some of the most inveterate diseases after the glands were destroyed and the bones already affected.

* * For the advantages over the ordinary preparations of Sarsaparilla, see Professor Dewees' valuable work on the Practice of Physic, and most of the late standard works on Medicine.

Professor Eberle, in the last edition of his *Therapeutics*, vol. 2d, page 206, makes the following remark:—"Carpenter's Compound Fluid Extract of Sarsaparilla is a very neat and excellent preparation. It possesses all the active properties of the root in a highly concentrated state, a table-spoonful being equivalent to a pint of the ordinary decoction. I have used it in several instances with decided benefit. From the smallness of the dose it is peculiarly adapted to administering this remedy to children," &c. &c.

Professor Frost, of the Medical College of South Carolina, has written to me on the beneficial effects of this medicine united with small doses of perchloride of mercury in cases of secondary syphilis, and his high opinion of this medicine, and its superior advantages over the ordinary preparations of Sarsaparilla.

I might superadd numerous authorities of the most respectable character in support of this medicine, but sufficient has been said to prove the character of it, and its superiority to other preparations of Sarsaparilla.

N. B. Country Physicians and Apothecaries' orders, and all orders from the country, for Drugs, Chemicals, Medicines, Surgical Instruments, Glass Ware, Shop Fixtures, &c. will meet with prompt attention.

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